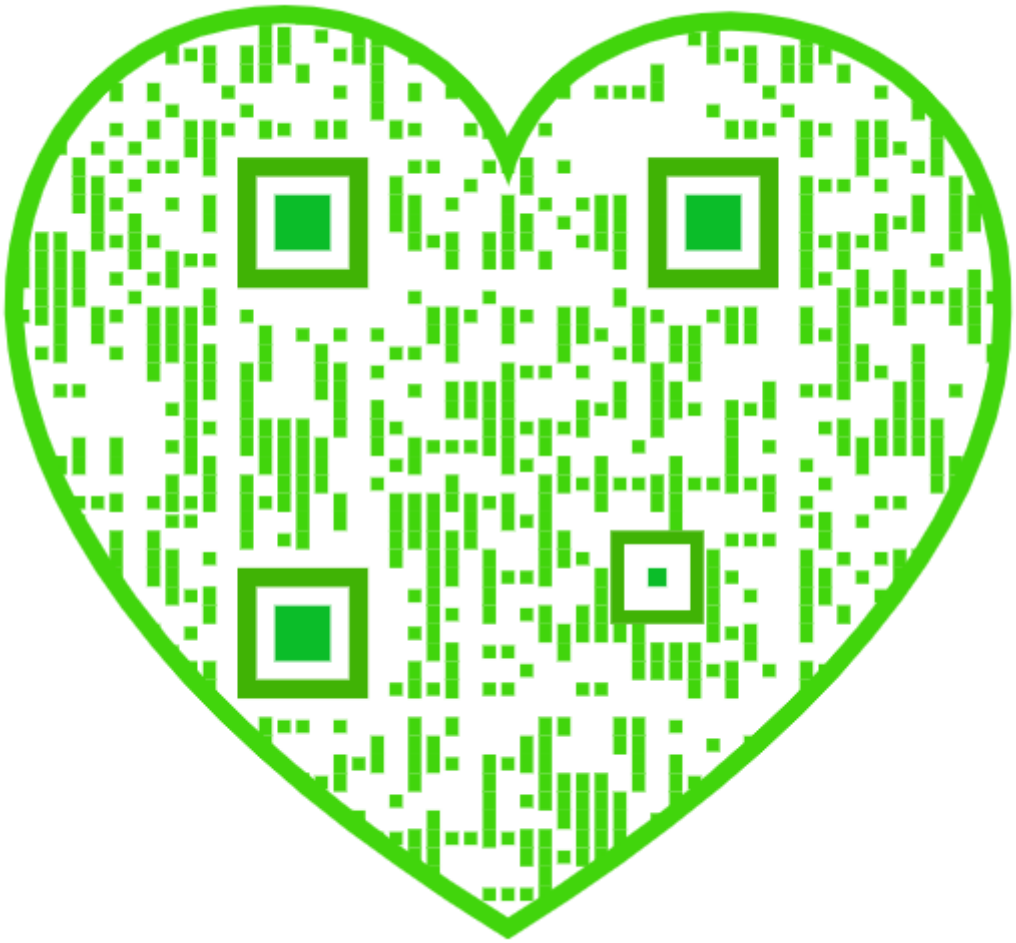

California Colonial Architecture - - Oct. 1935

The Architect & ENGINEER

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From F. H. A. clip sheet, August, 1935

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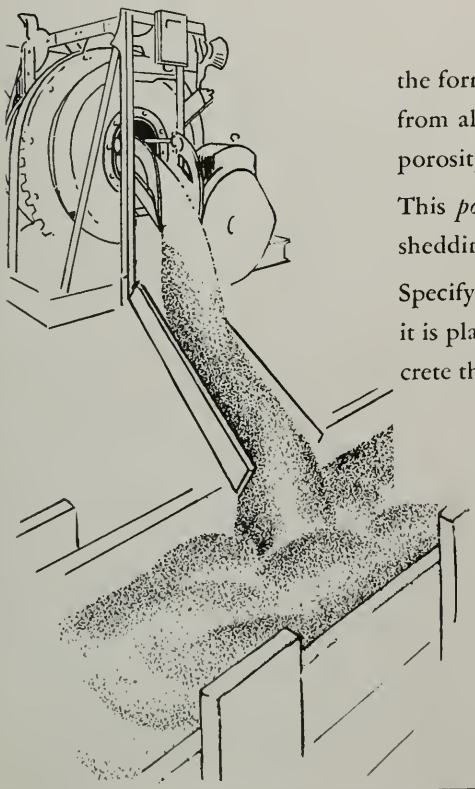

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Notes and Comments

WHAT has become of all the unemployed draftsmen? Not so many months ago San Francisco, Los Angeles, Portland, Oregon, and Seattle, Wash., were filled with knights of the drafting table seeking employment for any number of hours and for almost any pay that the employer was willing to offer.

There were licensed architects, designers, detailers, specification writers; there were engineers (structural, civil and mechanical), there were construction managers, surveyors, and landscape men.

Where are they all today? What has become of this army of unemployed white collar professional men? Have they all obtained employment in their respective lines of endeavor or have they gone into some other field more profitable than what they were trained for?

A few months ago there used to be on an average of five to ten men a day call at the office of this magazine or herald the writer on the street, all seeking employment. Anything, anywhere, any time. Just give us something to do.

Month by month since the first of the year these untiring job seekers have become fewer and fewer. Since the first of September instead of requests for work the situation has reversed itself. Employers are in search of draftsmen. That can mean only one thing. The building industry is on the up-grade. Building permits substantiate this which should encourage the optimist; dissipate the pessimist; give the young graduate a brighter slant on life.

But the return of better conditions for our architects and engineers does not explain altogether this remarkable scarcity of good draftsmen. Offices are not so crowded as to account for all the surplus unemployed. There must be a lot of good men still available. But where are they? Are they on relief and keeping under cover? Have they taken to some other vocation? Have they departed to some other clime?

Very recently an architect in Honolulu attempted to secure a capable designer and detail man for his office, promising a fine salary and permanent employment. At this writing the job is still open. From Reno, Nevada, came another urgent call for two or more first class drafting men. But no one could be found to go. The San Francisco Architectural Club was emportuned. The secretary combed the city for likely candidates to fill the opening. F.W.J.

⁂

A new dense flooring for factories, shipping platforms, etc., is said to be highly resistant to abrasion, water, and acid proof and noiseless. It is applicable to wood, concrete, or steel bases.

⁂

THE School of Architecture at the University of California has long been in need of a suitable building in which to house its valuable collection of architectural books. The Ark is admitted to be a firetrap and certainly no place to store records or literature not easily duplicated. At last, however, the school is going to have a place to store its treasures with assurance of safety. A fireproof annex to be joined to the main building by a glassed-in arcade will be built at a cost of $15,000. Warren Perry, Stafford Jory, Will Corlett and Walter Steilberg, have helped with the plans, and if talent means anything the building should be a good one.

LANDSCAPE gardeners seeking novelties, are now offered a floating aluminum lily pad which conceals a 60 watt lamp beneath its metal skirts, and affords illumination at night. Another garden appliance is a small pump for recirculating water for falls, fountains, etc.

⁂

NORMAN PETERSON of Pine Knot, California, was an entrance student in the School of Architecture, University of California, at the commencement of the fall semester. Peterson prepared for college at the San Bernardino Junior High School. He has been devoting considerable time and study to the science, or shall we call it art, of building fireplaces. A lot of people think they know how to design and build a fireplace. But a recent survey has demonstrated quite to the contrary. Many fireplaces fail to draw, let alone throw out heat. They look nice and that's about all you can say for them. Peterson thinks there is room for a real, honest to goodness authority on fireplace construction. And maybe he's right.

⁂

HAROLD VANBUREN MAGONIGLE, F. A. I. A., New York architect, died suddenly on August 29 while visiting friends in Vergenes, Vermont. In recent years Mr. Magonigle was constantly in the country's architectural eye through his criticisms appearing monthly in "Pencil Points". ARCHITECT AND ENGINEER readers will recall Mr. Magonigle's recent criticism of Irving F. Morrow's house in San Francisco and Mr. Morrow's reply, published in this magazine.

⁂

THE 1934-35 officers of the State Association of Architects must have given a good account of themselves. Practically the entire board was reelected at the recent Santa Barbara convention.

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THE DECEMBER NUMBER

The December issue of THE ARCHITECT AND ENGINEER will be a special one; its subject, that movement in architecture called modern, and by many confused with the label "modernistic".. The latter is a fugitive and empty imitation, a style; the former, a basically new approach to architecture, whose roots lie in the generation of the great Louis Sullivan.

It was Sullivan who gave impetus to the movement in the principle, "form follows function".

To architecture this was a principle as revolutionary, as upsetting, as energizing, as Einstein's relativity to the new physics.

Sullivan was a law-giver to the new architecture, unable himself quite to reach the promised land and the purely functional in form. It was Frank Lloyd Wright who in America carried the statement of functionalism toward fulfillment.

From Germany, France, Holland, the Orient, the younger generation came to him; worked as disciples in his Wisconsin studio.

Imitation of the new architecture has seemed easy.

"Seemed".

Thus a bastard pseudo-modernism has sprung up, with a surface of manner, a self-conscious and sterile stylism.

The December issue of THE ARCHITECT AND ENGINEER will avoid any presentation of this. Its intent is to make clear the distinction between pseudo-modern, the "modernistic" imitation, and that vital new architecture which is charged with potency for the future and giving it direction.

The functional conception is one utterly different from a stylistic one. The psuedo-modernist begins with an external picture, an effect. The modern, with the floor-plan, with a social conception of the needs of the users of the building.

The new architecture is based upon new uses of materials, and new conceptions of how to live life. Mobile walls, sliding roofs, open the house to the sun. A new space-feeling pervades. Its conceptions are organic rather than mechanical.

California is particularly rich in examples of the new architecture at its best. Its creators are in no unanimity whatever,—their work varies strongly. Lloyd Wright, Schindler, Neutra, lead. A generation of still younger men, notably Harwell Harris, follows. The south is adventurous; the north, conservative.

The December issue of THE ARCHITECT AND ENGINEER will present a representative summary of the work being done in California. Leaders and protegonists in the movement will speak for themselves. There will be a great deal of photographic illustration. And the typographic design, done by Pauline Schindler, editor of the issue, will further carry out the spirit of the whole.

The Architect & ENGINEER

Vol. 123 October, 1935 No. 1

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A.I.A. Honor Award

RESIDENCE IN PIEDMONT PINES, OAKLAND, CALIFORNIA
FREDERICK L. CONFER, ARCHITECT
JAS. H. ANDERSON, JR., ASSOCIATE

The Architect & ENGINEER

October, 1935

Style

California Colonial

by Archie T. Newsom
Architect

California seems on the verge of having an Architecture all her own. This is particularly apparent with the present revival of home building when a new freshness and change of style shows to a marked advantage against a background grown dull and stale through years of depression. During the recent "Dark Ages" material manufacturers and architects have had plenty of time to study matters other than actual production. They managed to work themselves into a busy frenzy of new ideas and new methods; partly to occupy their forced idleness, and partly in an endeavor to promote a revival of public interest. Now, the results of their efforts have become a real influence. There is a decided movement in California to incorporate these modern thoughts with the architectural traditions of this State, which has brought forth a style that is natural, practicable, and expressive. Such a development, based on fundamental principles, has always become a lasting and recognized period throughout the history of architecture. Therefore, in order that this present known "California Colonial" or "Monterey Colonial" style of architecture may be substantially classified, the following article may be appropriate in that an honest endeavor is made to trace its birth and growth.

ARCHITECTURE has always been a permanent expression of the life and history of a locality or country. The problems and living conditions of a people have, without fail, created and developed a style that could ever afterwards be identified with the particular place for its inception. This is true of California, with its varied history of adventure, romance and color. From early exploration to present glory, it has had and still retains a lasting appeal. Perhaps the greatest physical evidence of all of these tributes is most readily seen in its structures, past and present.

When Father Junipero Serra finally reached the site of San Diego and began the building of a continuous chain of Missions, he planted the seeds of an architecture as distinctive as that of any clime. Of course, whatever those early builders would do, they were bound to bring in the influence of their native Spain and Mexico. Perhaps that of Mexico had better be stressed more, as whatever might be attributed to Spain had, in turn, passed through the same primitive settlement and development in the growth of that Spanish colonizaion as later took place from Mexico into Alta California.

In a comparatively short number of years, these Franciscan Fathers and their organization had created a line of settlements from Mexico to Sonoma, each the

OLD HOUSE RESTORED, MONTEREY, CALIFORNIA
Photograph by Archie T. Newsom

OLD HOUSE IN MONTEREY, CALIFORNIA
Photograph by Archie T. Newsom

outgrowth of a Mission establishment. Then the trails and sea lanes began pouring in the adventurous pioneers, first principally from the south and Spain, later from most every part of the sphere.

The primary duty in the hearts of the fathers and brothers of the Franciscan Order was the Christianizing of the Indians along this virgin country of the Pacific Coast, and the great wonders of their work is better understood when we know what a low class of digger Indians they had to take in hand. Starting with this poor human material, the tireless missionaries raised these savages from a life of squalor to a plane where they became the invaluable workers and servants of the Church and settlers. They were taught the arts of weaving, cabinet making, building, pottery, iron work, and even painting. With the general use of this unusual labor, there immediately developed a style quite different, although analogous to the basic principles that were the foundation of a system of training. Therefore, through the original

TYPICAL OLD TYPE OF HOUSE IN MONTEREY, CALIFORNIA
Photograph by Archie T. Newsom

inhabitants, there began a period of life and art that could be nothing else but Californian. Its changes in development would, of course, depend upon many insuing conditions and history.

Materials Available Influence Style

The principal condition that determines the derivation of an architecture is the type of materials natural to the locality, and the restrictions thereby imposed on the builders. In the part of California where these earliest examples appear, this fact becomes quite evident.

Without long difficult hauls, wood was limited to scattered groves of short brushy trees and resort had to be made to such peculiar material as tules, adobe, and tile clay, using lumber only for posts, beams, rafters, doors, windows and furniture. Floors on wood joists, therefore, would not be practicable or economical, so there remained the tamped clay floor, or the burned tile slabs laid directly on the ground.

GENERAL CASTRO HOUSE AT SAN JUAN, CALIFORNIA
Photograph by Archie T. Newsom

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HOUSE FOR DR. T. E. REYNOLDS, PIEDMONT, CALIFORNIA
JOHN KNOX BALLANTINE, JR., ARCHITECT

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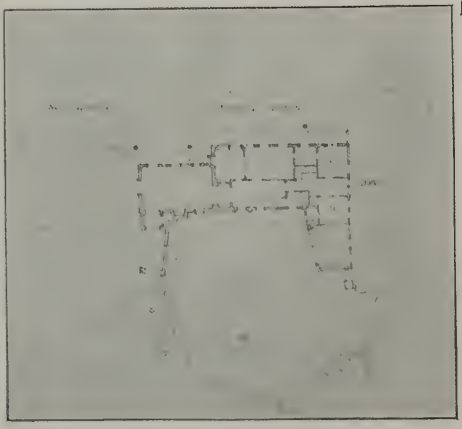
John Knox Ballantine, Jr., Architect



PLAN, HOUSE FOR DR. T. E. REYNOLDS, PIEDMONT, CALIFORNIA
John Knox Ballantine, Jr., Architect

Stone and rock existed in quantity, but here again there was the problem of labor and transportation, so most walls were constructed of sun dried bricks of adobe mud, plastered over, except some of the more pretentious buildings, such as the Missions themselves. To give the necessary supporting strength, these walls were enormously thick. The use of plastered mud over adobe walls, put on by hand and made smooth with the palm of the hand or sacking, gave the soft, uneven surfaces that are so charming to us now. There followed the many coats of whitewash to protect this mud from the melting effects of

A.I.A. Honor Award

HOUSE FOR DR. T. E. REYNOLDS, PIEDMONT, CALIFORNIA
John Knox Ballantine, Jr., Architect

rains. As further protection, roofs were framed with wide overhangs, both at eaves and gables.

In the roof construction, the lack of lumber, except for rafters, brought into use the tules and burned tiles, as mentioned. The tules were laid on the rafters and then covered with these orange red tiles that had been formed by the Indians, shaping the wet clay over their thighs. In time the moist air of the coast, with the fogs and dusty winds, started a growth of moss and lichens, creating the velvety textures in shades of old greens, blacks and yellows that our architects of today have been endeavoring to imitate in the present colors of roofing terra-cotta.

At first, these early builders had to plan their construction along the simplest lines, evolving straight, low structures, frankly divided through into sections forming the various rooms, which were entered from continuous covered porches. Grouping these buildings together in connecting units finally resulted in a rambling style about a patio, giving a protected, sunny spot, sheltered from ocean winds and the ever present possibility of a pioneer's dangers, for after all, these Indians were, as yet, not far from savagery, and, in addition, the

MODEL OF LIVING ROOM BEFORE COMPLETION BY HAROLD WALLACE, HOUSE FOR DR. T. E. REYNOLDS, PIEDMONT

John Knox Ballantine, Jr., Architect

DETAIL OF LIVING ROOM, HOUSE FOR DR. T. E. REYNOLDS, PIEDMONT

John Knox Ballantine, Jr., Architect

hard life naturally brought forward lawless elements in the ranks of the settlers themselves.

When the broad acres of this new land became covered with flocks and herds and their storehouses overflowed with grain, hides, wool and tallow, these rancheros began thinking of a better life. Their standards of living rapidly progressed and their demands for conveniences and luxuries soon brought business and trade with the outer world. First the galleons of the Spanish main, then the Yankee clipper ships, sailed up the golden coast and dropped their anchors at natures ready made harbors of San Diego, Santa Barbara, Monterey and San Francisco. For exchange, these colonists naturally asked for the articles foreign to their own production, receiving such additions as fine cloth, metals, furnishings, tools, ready made windows, doors and paints. The articles that related to their houses were supplied mostly from the Atlantic coast, and soon these primitive adobes, which originally were, and still remained somewhat Spanish in character, took on the details of American Colonial Architecture. Here we see the life and conditions of a period developing an architecture, influenced by Spanish, Mexican, Indian and finally North American Colonial, and becoming individual to this locality.

Home Becomes an Hacienda

Life now had become broader, with facilities for communication and transportation more easily attainable. The pioneer's home grew into an Hacienda, which, in those romantic days, was a hospitable haven for wayfarers, such as the dignitaries of state, priests, neighboring rancheros and trades people, traveling the long stretches of El Camino Real (The King's Highway).

Ample guest quarters were provided with facilities for food and comfort, so arranged as not to interfere too much with the daily life of the family, but still be re-

lated in a friendly way. Now and again, some craftsman, artist, or author might stop long enough to continue a work, or add some bit of interest to the development of the rancho; so a studio, workshop and chapel were added.

As always, the house was still the man's stronghold, with a certain feeling of security through the grouping of the buildings and connecting walls. About the Hacienda, a great part of the life was out of doors, whether it might be work play, or siesta; therefore, there would be various patios necessarily arranged in sympathy with the vital parts of the plan. As the mission was the foundation of the whole sequence of this progress, the predominating influence of the church was always evident, and

CARD BOARD MODEL OF LIVING ROOM BY HAROLD WALLACE, HOUSE FOR DR. T. E. REYNOLDS
John Knox Ballantine, Jr., Architect

HOUSE FOR DR. OULTON, BERKELEY, CALIFORNIA
Edwin Lewis Snyder, Architect

RANCH HOUSE ON THE JAMES ROLPH, III, RANCH, SAN MATEO COUNTY, CALIFORNIA

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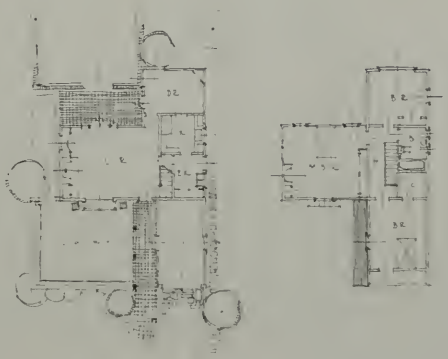
FREDERICK L. CONFER, ARCHITECT

RESIDENCE OF MR. AND MRS. RAYMOND BOWERS, BERKELEY
Frederick L. Confer, Architect

much of the decoration and objects of art were of a decided ecclesiastical spirit.

In the port settlements and pueblos, there was a need for more extensive quarters, and better means of construction being available, the houses enlarged from earthen huts to two-story residences of brick, stone and tile, as well as the old sun dried adobe blocks. The porches rose from the ground and became long, overhanging roofed balconies connecting the upper rooms, which were reached by exterior stairways from walled in patios. Of course later, the stair became a part of the interior plan.

The Latin desire for romance and color was always prominent. Pots of flowers,



PLANS RESIDENCE OF MR. AND MRS. RAYMOND BOWERS, BERKELEY
Frederick L. Confer, Architect

ENTRANCE DETAIL, RESIDENCE OF MR. AND MRS. M. C. WANTZ, BERKELEY, CALIFORNIA

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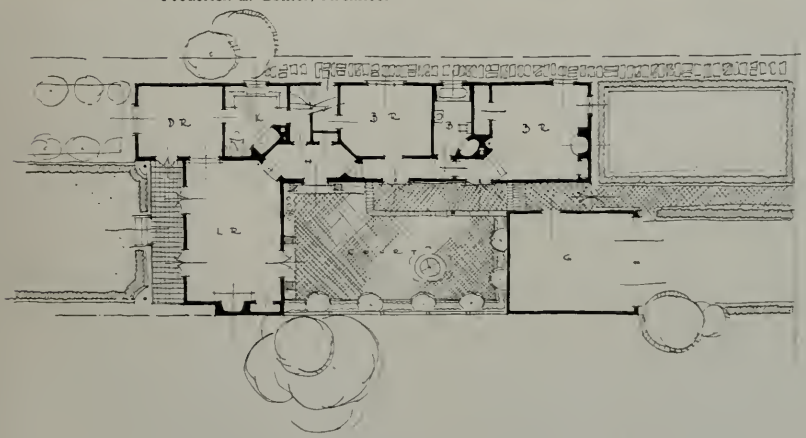
Frederick L. Confer, Architect



PLAN, RESIDENCE OF MR. AND MRS. M. C. WANTZ, BERKELEY
Frederick L. Confer, Architect

rugs and shawls hung from the porch rails. With the advent of paint, the buildings sparkled in colored window sash, borders about doors, and wainscots both in rooms and around the base of the exterior of the house. This last treatment was to hide the splash from the eaves, which would dash a spray of mud up and on to the white-washed walls. Here and there a whole surface would be given a soft tint of rose or salmon to relieve the eyes from the glare of white in the sun. From beams and porch roofs hung clusters of peppers, ears of colored corn, Indian pottery in woven grass nets, and olla jars of drinking water. Throughout the whole, there was always that touch of the art of the Indian worker.

Colonial Influence from the East

As California became better known, its appeal was felt particularly in the young and growing states to the east, and the Yankee, from New England, established himself in these Pacific Coast centers. Here again, a still stronger American Colonial influence appears. Wall paper comes into use, as well as bits of paneling, mantels, door and window trim, and white wood work. Furniture of the Atlantic Coast becomes mixed with locally made mission handicraft.

As Monterey was the capitol, and was likewise the main seaport at that time, the best examples of the real California Architecture reached a distinctive development about that vicinity. Even today, there still remain many interesting and historical relics of those days of romance and adventure. Quite a few of these places have been rehabilitated and restored, but retaining that peculiar combination of influences that give this style its quaint charm. Due to the fact that this particular locality has so much still standing in a pure and original form, it is now very often referred to as "Monterey Colonial". This designation, no doubt, is an aid in distinguishing the basic California Architecture from the present variations of Spanish, Mediterranean and Italian influences that predominate in the modern popular examples throughout the state. It is interesting to know that at the present time this colonial type is rapidly receiving more appreciation.

In a further study along the old El Camino Real and its byways, many worthwhile examples stand in their various states of repair, restoration, or ruin. In the town of Sonoma near the plaza one could spend hours browsing about the Mission, with the old Blue Wing Hotel across the way, where the bandit Murietta was once a frequent and familiar guest; then along the same street, where there can be seen buildings of later date, but patterned closely after those earlier structures. Also nearby is the old rancho of General Marino Vallejo.

Again on the northern outskirts of Oakland, is the restored Hacienda of Castro, with its two-storied porch, and attendant buildings, still clearly grouped about the protected patio. On south, the road leads past the remains of the Mission San Jose and on down to the village of San Juan, in San Benito County, with its Mission by the plaza. There stands another Castro abode, and the Plaza Hotel, both quite distinct in this California style.

On and on, the highway of romance leads south to Monterey, to Santa Barbara, thence to Los Angeles, and to San Diego. Along the way are many such places as the Rancho Camulos, where Helen Hunt Jackson based her story of "Ramona", and on to "Ramona's Marriage House" in the "Old Town" section of San Diego. In addition to the familiar landmarks generally seen by most visitors, the less known and forgotten examples without important political and historical reputations lay sleep-

ing on side streets and narrow lanes, and must be rediscovered by slow wanderings.

And Then—Our Own Architecture

As the covered wagons trailed across the plains and the hordes of traders and immigrants sailed their wind-jammers up from the Horn, California filled with a populace far different from the early Spanish explorers. These later settlers were also pioneers who saw in the Pacific slope chances for future and new life. Taking the country as they found it, the easiest way was to alter what they could use and surround themselves with an atmosphere like that left far behind.

Then another step in development took place when upper stories and additions to the old houses were framed of timber, surfaced with ship-lap or boards and battens, and painted white. Shingles or split shakes appeared as roofing in lieu of the limited and slow supply of terra-cotta tiles. Colonial delicacy and taste added rapidly to the ever increasing transformation. From the desire for an appearance of cleanliness and of neatness, and through that feeling of starting anew, these argonauts gave the sturdy dwellings of mission days a touch of freshness. Old work, as well as the recent, received a general baptism of white. Rafters, eaves, porch posts, and balconies; none escaped. Where expense had to be spared, whitewash was always a ready alternate.

With the great exodus of the forty niners to the gold fields, California's harbors became choked with abandoned ships. Here was a source of supply of any variety of materials and furnishings; cabinet work, hardware, lighting fixtures, even to the paneling from the cabins, and the flooring off the decks. The touch of the sea then entered into the evolution of an architecture.

California became the melting pot of not only races from many lands, but likewise of ideas, ideals, arts and modes of life. From this great boiling and filtering, there came forth among other distinctive products, a style of architecture that could be called her own; an architecture of history, romance, adventure; of strife and of happiness; influenced by the Indian, Spaniard, Mexican, and the Colonial, as well as the mariner from the seas.

DETAIL OF STATION IN SAN FRANCISCO, SHOWING SHELL MOTIF

Oil Stations

by L. Raymond White, Architect

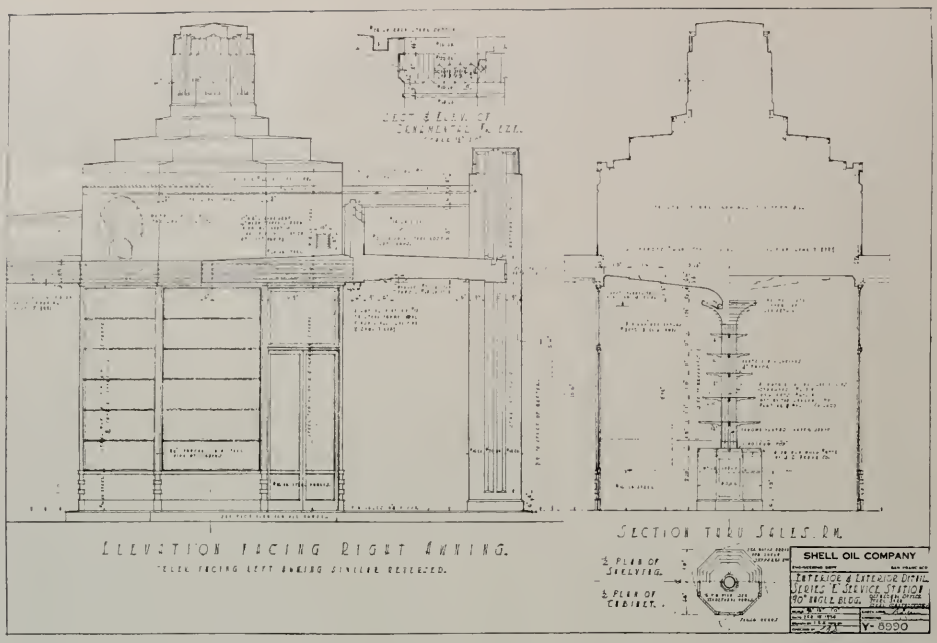
● *Leading Petroleum Companies are Fast Replacing Ugly Structures With Buildings Architecturally Correct*

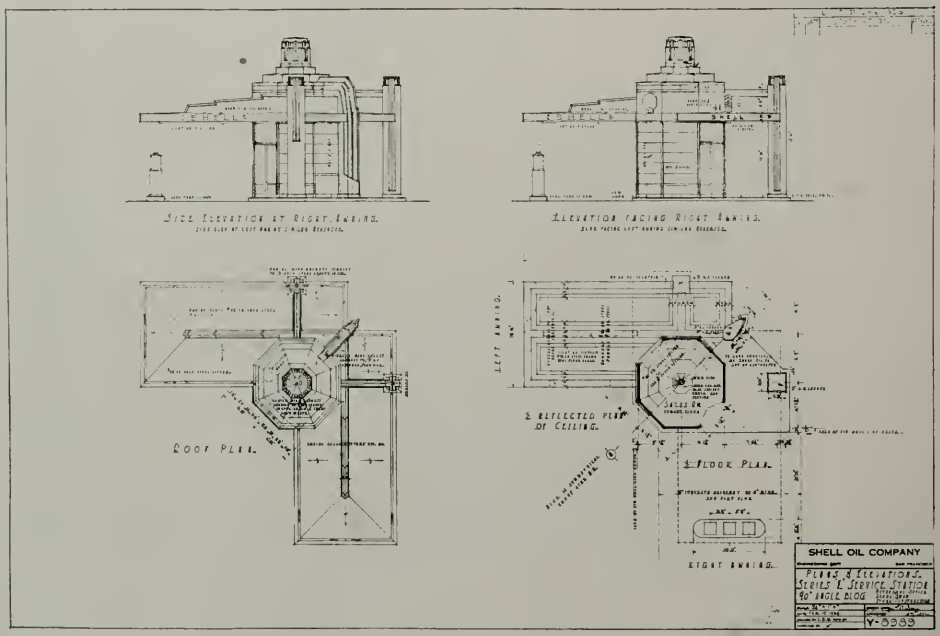
TWO interesting problems of design are faced by architects who plan service stations for major oil marketers today. One is the demand for "continuity of impression," certain readily recognized characteristics in all stations to hasten recognition by motorists and promote sales. The other is the requirement that service stations shall be really architectural; not just sheds hastily bolted together. They should be buildings in which harmony of composition has been adapted to functional needs.

"Continuity of impression" is responsible for the public idea that service stations are all pretty much alike and are turned out by mass production methods in much the same manner as automobiles. As a matter of fact, no two service stations are alike. Every one is an individual problem. When the architectural staff has completed one station, they cannot sit back and enjoy the etchings on their walls while the construction department throws together a dozen or a hundred stations in different localities from one set of plans. The very next site leased presents an entirely new problem. No paper pattern can be superimposed and a new station "cut out" immediately. The lot may be a corner or in the center of a block or in a thin triangle. It may be oblong or square. Even if it has the same outward essentials as a lot on which a station already has been built, traffic conditions may be (probably are) different; adjoining structures certainly are different and there may be local conditions found nowhere else. Standardization is impossible.

TYPICAL SINGLE AWNING COMBINATION UNIT, TURLOCK
L. Raymond White, Architect

Given a site, the architect's first problem is to locate the "islands" or groups of pumps from which gasoline will be dispensed and which are the center of every station's activity. If possible, these islands are placed so that the motorist can come in and go out on the same street without having to cut across any thoroughfare or disturb the flow of traffic. There are many obvious reasons for





PLANS AND ELEVATIONS, DOUBLE CANOPY STATION, LOS ANGELES

L. RAYMOND WHITE, ARCHITECT

DOUBLE CANOPY STATION, CANTILEVER TYPE, LOS ANGELES
L. Raymond White, Architect

this, but just one would be enough: A station into which a car cannot be driven easily will not get a profitable volume of trade.

With the pump islands located, the salesroom takes position almost automatically, either between the pumps or opposite them, so that station salesmen can reach and serve customers with greatest speed and efficiency. Changes in salesroom design are constantly being made as oil marketers seek ways to display accessory merchandise so that it may be seen by gasoline customers.

Larger stations include lubrication facilities which may be under the same roof as the salesroom or in a separate building. Here again the site dictates. If the lot is long and narrow, the "lubritorium" generally goes in a separate building. If the lot is square and compact, a combination unit is designed.

DOUBLE CANOPY STATION, CANTILEVER TYPE, LOS ANGELES
L. Raymond White, Architect

Construction problems vary as much as the architectural problems. Naturally all stations have to conform to local building codes, which are properly strict in view of the inflammatory nature of the merchandise handled. It behooves the architect to know what is permitted and what is forbidden. In some localities, wood frame and stucco buildings may be erected. In others, all steel buildings are permitted and elsewhere nothing but concrete and masonry. Regulations for the construction of underground storage tanks with outlets to pumps are more uniform, as the fire hazard here is about the same in every locality and the underwriters have worked out excellent safeguards against accident. Incidentally, the station must be so laid out that the inlet valves of these tanks can be reached for refilling without interrupion of station business.

Great advances have been made in recent years in the physical appearance of service stations. Not many years ago the merchandising of gasoline, motor oil and lubrication was in the same formative state as the automobile for which these products were made. It was inevitable, therefore, that service stations should be utilitarian only—Model T, so to speak. Often they were built so they could be taken down, moved to another site in quick time, as traffic routes in cities had not become established, highway routes were often being changed, and the oil companies had to meet evolutionary situations as best they could.

ROMANESQUE STATION, NEAR STANFORD UNIVERSITY, PALO ALTO, CALIFORNIA
H. O. Alden, Architect

While stability does not seem to be a characteristic of any phase of life today, petroleum merchandising has at least emerged from the kindergarten stage and the planning of service stations is no longer a matter of throwing up a shelter and setting up some pumps on a likely corner. Two factors control the architectural design of

service stations today. One is the policy of the major oil marketers of making their stations welcome in the neighborhoods where they are located. The second is the policy of achieving some "continuity of impression" which will help sell goods.

Shell Oil Company has laid down a policy that service stations built by the company must improve the appearance of each location and be an asset, not a detriment, to surrounding property. In special cases, stations are designed to harmonize with their localities. The Shell service station opposite the Stanford campus in Palo Alto is Romanesque in design, carrying out in every detail the architectural style of the university buildings. The same policy was followed in building the Shell station in Westwood, home of the University of California at Los Angeles. Shell stations in Monterey and Santa Barbara follow the Spanish tradition, and so on.

The great majority of Shell stations, like those of other major oil companies, are built in business or residential sections where there is no special style dictated by surroundings. For such stations, Shell has created a modern design, certain features of which are retained for all stations. These features are the ornamental columns and beams supporting canopies, the horizontal band at sides of canopies which is carried around the building as a decorative motif, and the introduction of a painted red and yellow band at base of building. All stations are painted a pleasing cream color.

Canopies over pump islands vary with the location, one of the newest designs being the cantilever type which affords greatest visibility by the omission of supports. Varying ornamentation is used — tiles, fountains, urns, and the like, according to the station. Every site is landscaped with shrubs and other plants which make a rest-

DOUBLE DRIVEWAY STATION IN SAN JOSE, CALIFORNIA
H. O. Alden, Architect

DETAIL OF STATION IN WESTWOOD, LOS ANGELES, DESIGNED TO HARMONIZE WITH ARCHITECTURE OF UNIVERSITY
H. O. ALDEN, ARCHITECT

DETAIL OF SHELL STATION IN OAKLAND, CALIFORNIA
H. O. ALDEN, ARCHITECT

SPANISH TYPE STATION, CLAREMONT DISTRICT, BERKELEY, CALIFORNIA

ful background of green and turn a necessity of the machine age into a garden spot which often is the most attractive location in the neighborhood.

Continuity of appearance and easy recognition that here is a place where Shell products may be obtained are provided by the similar architectural features, continuous color schemes and signs in "company colors". It should be noted that these signs are well-designed, and not at all blatant, so that while they cry Shell's wares in no uncertain terms, the shouting they do is harmonious and inoffensive.

In short, service stations like the cars they serve, have taken on "stream lines" and today are designed as much for beauty as for utility.

Competitions

● *So-called Tandem Contests Violate Principles of Institute Code. Special Committee Rules*

ARCHITECTURAL competitions have always been a mooted topic for discussion, pro and con, by the members of the profession. Recently the Executive Committee of the Board of Directors of the Institute was asked to pass upon the fairness of the so-called "tandem competition" as practiced by some architects. The question was submitted in hypothetical form to the Committee on Competitions, Egerton Swartwout, chairman, as follows:

"Is it, or is it not, a competition when two, three, or more architects submit drawings for the same project at the invitation of an owner or building committee, with the understanding that no one of the architects shall present, or work upon his documents until the prospective client has received and paid for the work of his immediate predecessor, performing like duties?"

The reply of the Committee on Competitions was:

"There can be no question that this is a palpable attempt to evade the requirements of the competition code for reasons which may or may not be of particular importance to the owner."

The Board took action as follows:

Resolved, That in the opinion of the Board of Directors the form of so-called tandem competitions as reported by the Committee on Competitions in a letter of April 8, 1935, violates the principles of the competition code of the Institute, and therefore is not approved; and be it further

Resolved, That the document of the Boston Chapter Committee on Ethics and Competitions, entitled "A Statement to the Architectural Profession," be published in *The Octagon* with the approval of the Board of Directors.

In accord with the second resolution above quoted, the document of the Boston Chapter is printed in full, as follows:

"The architects themselves, and not the public, are responsible today for most of the disabilities under which they are suffering. This has been true for years past and tragically true today. They have established in the public mind a definite impression that under certain circumstances professional services for which a substantial fee is legitimately charged, may be secured without any compensation whatsoever. The members of no other profession have placed themselves at such a disadvantage. A lawyer acting as head of a building committee was recently asked by an architect what he would do when approached by a man who, seeking his thoughtful professional opinion in solving a legal problem, told him that he intended to ask four or five other lawyers for corresponding opinions; that he would then consider these

opinions and decide which jurist to retain. He replied, 'I should kick him down stairs.' The principle of competition may be acknowledged as having a limited validity in respect to official architecture, but it is a highly questionable procedure against which the architectural profession should set its face as firmly as possible when applied to all other types of projects. There is reason to believe that this could be accomplished through a campaign of education. So long, however, as competition does obtain, no conditions other than those demanded by The American Institute of Architects should receive the sanction of an honorable practitioner. The architect who has pride in his profession, instead of implying to the public that he is held to the tyranny of a code, should feel bound to explain and vindicate its philosophy, for at least he knows that it provides the fairest field for a trial of skill. It will be found that in all relationships the public is prepared to accept exactly the valuation that the architect puts on himself and his own services.

"The Committee on Competitions of the Boston Chapter represents the Institute in its relation to competitions generally. In cases of doubt or uncertainty in architectural relations, if a careful study of the "Circular of Information on Architectural Competitions," A.I.A. Document No. 213, is not fully informative, the Committee should be consulted. This Committee finds that the so-called 'tandem' competition is a subterfuge to avoid code procedure, and as such is not only wholly without merit, but pernicious and inimical to the interests of the entire architectural profession. The Committee further believes that this type of competition is so palpable an evasion of the code as to be readily recognized, and consequently it becomes the manifest duty and privilege of every architect to conform to its provision in his relations with his clients. To do otherwise constitutes a breach of professional practice.

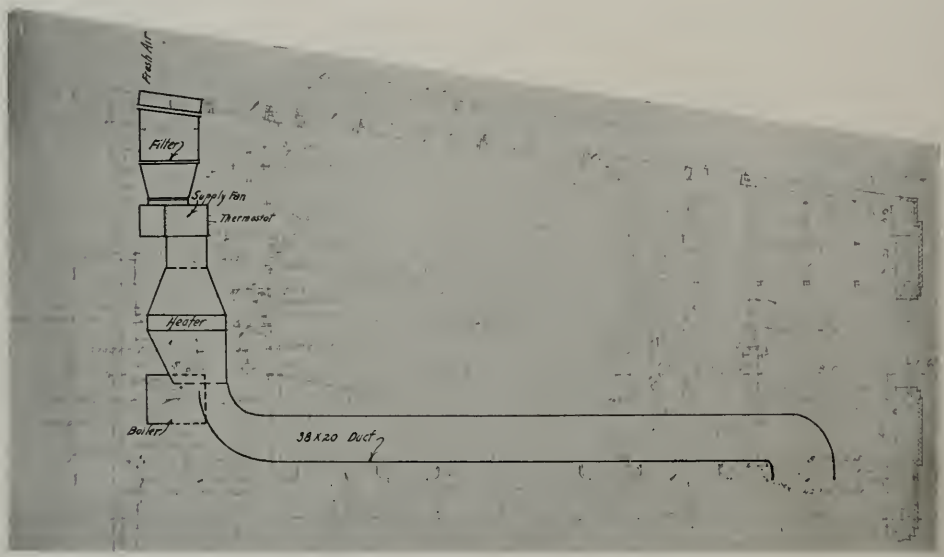
"There exists in the minds of certain architects the conviction that, during the present stagnation in the building industry, the Institute should lower its standards of professional practice, scrap the competition code and abandon all disciplinary action,—in effect, throw up the sponge and return to the dog-eat-dog cave-man procedure of fifty years ago. It is an utterly selfish and wholly illogical viewpoint, one that if followed would result in the complete demoralization of the profession. It is economic suicide from a business standpoint, and would result in all architects being held in general contempt, instead of only a proportion of them, as is now the case. A great deal of harm has already been done, and is continually being done every day, by the highly questionable scramble for a job, once it has been announced that somebody is going to build something. The esteem in which such architects are held is illustrated by the recent announcement of the selectmen of a country town who, contemplating building a town house, announced that: 'All drawings submitted will be pinned up on the wall, and every architect will be given a chance to sell his wares!' The equivocal position in which a distinguished architect recently found himself by agreeing to enter a questionable competition for a nominal fee, representing about one-fifth of his actual office expense, no jury, no professional adviser,—resulted in the selection of a 'dark horse' by the building committee, and the consequent loss of money and prestige by the distinguished architect. The 'dark horse's' prestige is now correspondingly enhanced, for he can and probably will say, 'I'm not afraid of competing with distinguished architects; I won out against one the other day. Their fine talk of 'ethics'

is all bunk, and they're not so hot anyhow!' The 'dark horse' is perfectly right, in this instance, at least. There is good reason to believe that if the distinguished architect had refused to enter the questionable competition, likely enough he would have been awarded the commission outright.

"We all know that a building committee delights to have architects make pictures for them to pass judgment on, while sitting in comfortable chairs, cross-examining the suppliant. The question is often posed,—How is the 'layman' to inform himself of the competence of an architect to solve his problem? The answer is another question, —How does the 'layman' inform himself of the qualifications of any professional man? Does he listen to a line of more or less high-powered sales talk, or does he judge by their works? It is a highly technical job, not only for the architect to solve a problem, but also for a committee, no matter how competent it may be, to evaluate its solution. It is a difficult job for a jury of experts to tackle; hence the 'Competition Code' and its safeguarding provisions. If there are a score or two architects for every job, only one is going to get it, so why spend vast sums, as is done every year all over the country by the architectural profession, with no return? Every time an architect enters a questionable competition, he wagers several hundred dollars to nothing on a twenty to one shot against him; often the odds against are even greater, for in many instances the job is 'fixed' for a favored one. Worse than that, when an architect cheapens the value of his services by offering to do work for nothing, or a purely nominal fee, it becomes a matter of deep concern to every practicing architect, whether a member of the Institute or not. If Institute members stood solidly together against this practice, there would be everything to gain and nothing to lose. The reputation of the Institute would be greatly enhanced, and all architects would aspire to join it and share its benefits.

"Codes of ethics and professional practice are founded on sound business principles. They are subscribed to by all members when joining the Institute. Unless they are observed in spirit as well as in the letter, their business value will be greatly reduced. Some architects are prone to say when approached by a prospective client, 'I should like to submit sketches to you on your conditions, but the Institute rules forbid my doing so.' This is an utterly foolish and cringing attitude for a member of the Institute to assume. There is no compulsion for him to join; he may do as he pleases, but he may not hope to enjoy the benefits and standing that Institute membership gives him and disregard its obligations. If he wishes to enter unauthorized competitions or vary from the spirit of professional practice, let him be honest about it and resign from the Institute before so doing. A few architects have done this and their honesty in so acting is respected. They may have forgotten that 'The Institute is the shield under which all architects whether or not they claim membership seek shelter in time of trouble.' There never was a better opportunity offered than the present for putting our house in order. The enforced leisure of the past lustrum suggests not the scrapping of ideals, but a period of purification and renewed confidence in the integrity and sound judgment of the builders of the Institute."

WEST PORTAL BRANCH OF THE SAN FRANCISCO BANK, SAN FRANCISCO
W. D. Peugh, Architect



PLAN, WEST PORTAL BRANCH, SAN FRANCISCO BANK, SHOWING LAY OUT OF HEATING AND AIR CONDITIONING SYSTEM

Banks

● *Pioneer San Francisco Institution One of First to Install Modern Air Conditioning Facilities*

OF current architectural interest in San Francisco was the opening last month of two units of the San Francisco Bank, designed by W. D. Peugh, Architect. They are the Fillmore Street and West Portal Branches—the first a remodeled and the second an entirely new structure.

The West Portal Branch has an exterior of Italian Travertine marble, with entrance of Verdi Antinque marble and cast bronze grillwork. The interior has marble and bronze counters, grills and wainscoating. Facilities include safe deposit, trunk, fur, coin and book vaults.

Of special interest in these two new bank branches is the equipment provided for heating and air conditioning. The two are among the first complete air conditioning installations in buildings of this type and size in San Francisco. Inasmuch as the two units are somewhat similar, a description of the West Portal Branch will answer.

On the main and mezzanine floors of this building are approximately 80,000 cu. ft. of space to be air conditioned. Central feature of the system is a gas-fired, fully automatic, American radiator boiler installed on the mezzanine floor. Intake air is passed through a glass filter and fan. Then, after being passed through an American blower flexi-tube heater, it is blown into the bank through grills at the ceiling.

The outstanding feature of the system is its automatic operation, facilitated by the use of easily controlled gas fuel. In the morning, the boiler is turned on by a clock and when the steam pressure is reached the clock starts the air fan. From then on, heat is controlled either by thermostat in the bank room or by a duct thermostat. When the bank room is up to temperature, the boiler is automatically shut off and ventilation alone is in effect. Also, should the outside temperature become too high, the duct thermostat will shut off the boiler. Thus, a comfortable and healthful atmosphere is insured within the bank at all times without supervision of any kind.

INTERESTING DETAIL OF A BERKELEY SPANISH HOME

Paint

by Theodore E. Damm

● *"Save the Surface" Campaign Has Only Just Begun—Industry is Making Money But is Lax in its Promotion Work*

IF further evidence is needed to support the contention that the National Housing Act has benefited the paint business, it is to be found in the increasing number of painting jobs that have resulted from interest developed in repair, alteration and modernization work done under the plan of the Federal Housing Administration.

According to the latest Bureau of Census figures, paint sales increased 26.9% in July, and 16.7% for the first seven months of 1935, as compared with the corresponding periods of 1934, the volume for this year up to July 31st being approximately $250,000,000.

While there is no absolutely accurate yardstick for measuring the exact benefits of the Better Housing Program to the paint industry, there is now available sufficient data upon which to base fairly reliable conclusions.

For example, an analysis of the pledges secured by canvassers in the local surveys conducted by Better Housing committees in 93 representative cities discloses that 23% of the total number of repair jobs pledged included exterior painting, and an added 14% covered interior painting and decorating.

On the basis of *dollar value* of work pledged, 16.5% represented exterior painting, and an additional 5% interior painting and decorating.

As of August 31st, 2,065,950 jobs had been pledged, covering work estimated to cost $526,794,000. Actual modernization and repair notes insured as of the same date numbered 359,078 for a total value of $135,257,747. (This figure does not include any loans above $2000 made under the provisions of the amendment to the National Housing Act permitting loans up to $50,000.)

It is estimated that industry is doing $5.00 worth of additional housing business for every Government insured dollar spent on repairs and improvements, in that the Better Housing Program, in making people property-improvement-conscious, has opened the doors of thousands of homes to industry's salesmen, who, because of the government's confidence in good credit character as evidenced by the offer of insured loans, brought out of hiding many millions in cash dollars.

It is calculated that the actual amount spent on modernization and repair work since August 1st, 1934, totals more than $786,300,000.

Applying the aforementioned paint percentages to this figure—namely, 16.5% for exterior painting, and 5% for interior painting and decorating, or a total of 21.5% of the estimated $786,300,000 — the conclusion is reached that the paint industry has profited from the Better Housing Program to the extent of approximately $169,000,000, including, of course, both labor and materials. Certainly a handsome figure in any industry's accounting records and very

convincing evidence that the National Housing Act, through its Modernization Credit Plan, has been a real boon to the paint business.

Continuing the study of the local surveys made in 93 representative cities, we find that the three industries which came nearest to the paint industry in value of work pledged did not benefit to a greater extent than 5.9%, as compared with the paint industry's 21.5%.

When it is taken into consideration that there is hardly a repair or alteration job that does not require the use of some paint, it can readily be seen why this industry has so greatly benefited from the National Housing Act. Also, the National Paint, Varnish and Lacquer Association, through its large and well organized membership, has been very alert to its opportunities and has taken active part in the Federal Housing Administration's program. There can be no denying the fact that the industries which have profited most are those which have most actively participated in the housing movement. It is an application of the well founded theory that "he profits most who serves best".

While the Federal Housing Administration has done a good job in giving wide publicity to the National Housing Act, there are still *too many* people who know *too little* about the Better Housing Program and the many advantages it offers to paint manufacturers, distributors, contractors, lending institutions and the general public. The paint industry hasn't even *begun* to "Save the Surface".

Compared with the average year's sales for the six years ending December 31, 1929, the pent-up demand on the industry, as a direct result of the depression, is estimated to be well over a BILLION dollars. The industry could double its annual volume and still not be realizing on 50% of its opportunities. The number of surfaces throughout the country that are sorely in need of paint repairs is simply appalling. Most authorities now calculate that only about 15%—or at the most 20%—of the paintable surfaces in the United States are properly protected.

While there may seem to be no advantage in trying to fix the blame for the tardiness of this industry in capitalizing on its opportunities to a greater extent, a frank discussion of the matter may provide a working basis for future development. There can be no denying the fact that the average retail paint dealer and painting contractor is not as sales-minded as he should be. He is too much of a storekeeper —too content to follow the old trading post methods of waiting for customers to come to him instead of going out after new business.

And that is where paint manufacturers and their salesmen also have fallen down. They, too, have been content to stick to their old-fashioned competitive selling methods, rather than build their volume on "creative salesmanship". Instead of trying so hard to get a dealer to throw out the line he is carrying and replace it with a new stock of merchandise which is often no better than the one he is selling, it might be more advantageous to the manufacturer to seek an entirely new outlet for his line — to place it with some enterprising and sales-minded merchant who has never sold paint before. Certainly he would be doing more to increase the sales of the industry as a whole, and it is reasonable to believe that he would also more rapidly increase his own sales. In this respect, the paint manufacturer might well take a leaf from the sales manual of the resourceful specialty salesman in other fields, such as the electrical appliance, radio, oil burner, coal stoker and automobile industries. Is it reasonable to believe that the sales of these industries would have increased so rapidly if

SAN FRANCISCO PUBLIC LIBRARY

their representatives had remained content to distribute their products through the old established retail stores? The answer is obvious! In today's highly competitive market it is not only advisable—it is positively necessary to resort to creative selling to building up a real volume of business.

There are certain very definite advantages in "creative salesmanship" over the strictly competitive type of selling, namely:

1. The salesman develops his own prospects, thereby forestalling competition.
2. He creates an opportunity for a sale which otherwise might never have been developed—at least not immediately.
3. His chances of making a sale on his own terms are far greater than if he were required to meet competitive prices.
4. He has an opportunity to realize a fair profit on his sales, whereas in competitive selling he must accept a lesser profit or no profit at all.

And now to come back to the National Housing Act and its benefit to the paint industry. This constructive piece of legislation has placed in the hands of the paint salesmen a most effective and much needed tool for increasing his sales, and one which is particularly adaptable to creative selling, namely, the so-called monthly installment or time-payment plan. In fact, modernization credit is the final answer to the property owner who has repeatedly put off his paint repairs because of lack of ready cash.

If there is still a paint manufacturer, dealer or painting contractor who does not understand the operation of the Modernization Credit Plan and the many advantages it offers him, it is high time that he fully acquaint himself with this powerful merchandising formula, which has contributed so much to the success of others.

It must be recognized that the average person does not like to ask a bank for money. Therefore, generally speaking, he will not take the initiative in seeking a loan to make his paint repairs. However, such a person is usually quite willing and ready to have some enterprising paint dealer or master painter submit his application for a loan, or accompany him to a bank and request the loan for him.

While making full and frequent use of time payments to purchase many of the other necessities of life—and even some of the luxuries — the average citizen is still not sold on modernization credit to make paint repairs.

Also, there are some bankers who still are not convinced of the safety and soundness of character loans, repayable in monthly installments out of income, and with government insurance against loss, as a desirable variation from their ordinary banking procedure.

It is the job of the paint industry to sell the banker, as well as Mr. John Q. Citizen on the advantages of time payments as applied to the repair, improvement and protection of the American home.

Following a highly successful spring and summer season, the paint industry is entering upon what should be an equally profitable autumn period. However, it will not prove to be such if industry's salesmen, including local paint dealers and painting contractors, fail to aggressively carry their sales messages to the property owner. Past history has shown that there is a definite let down in paint sales during the month of September, some time due to unseasonable weather, but more often attributable to the almost willful neglect of the industry to continue to cash in on its opportunities.

It must be borne in mind that there are literally millions of properties in need of paint repairs, and that a large percentage of owners are already committed to the necessity of making such repairs.

SKETCH, STREET IN PERUGIA, BY V. H. REEVES

Convention

by Harris H. Allen, A.I.A.

● *Good of the Profession Key Note of Eighth Annual Meeting of State Association at Santa Barbara*

CONVENTIONS of California architects alternate yearly between Northern and Southern California, and, unofficially, from the large urban business centers to smaller communities where the delegates' interest is concentrated on their professional and organization problems and on the accompanying fellowship and enjoyment of California countryside attractions. Each type of meeting place has its advantages, and the recent 8th Annual Convention proved that Santa Barbara is one of the most satisfactory locations for both accomplishment and pleasure.

Headquarters were at El Encanto Hotel, on the hill above the famous old Mission. It is well named, for the ensemble of cottages and gardens commanding a breath-taking view over city and sea is truly enchanting. Incidentally, the courteous attention, the excellent service, the comfortable, even luxurious equipment, deserved and received the appreciation and thanks of the convention.

EL ENCANTO HOTEL, SANTA BARBARA, HEADQUARTERS OF ARCHITECTS DURING STATE CONVENTION

Attendance was good, with an unusually

large proportion of Northern architects, and more ladies than usual. There was evident an increased spirit of unity, and the expressed intention for still further and more efficient co-operation between the Sections. Both as to business and entertainment, the 8th Convention can be ranked as one of the most successful in the Association's history.

Many delegates arrived Thursday, October 3rd, enjoyed a social hour and informal dinner, followed for the executive boards by a full evening meeting. Friday morning the convention was formally opened with an address of welcome by Mayor E. O. Hanson, a talk on "The Architectural Consciousness of Santa Barbara," by Capt. Charles Gordon Davy, President of the Chamber of Commerce, describing the city as "Muy simpatico" to architects—and the report of President Harold C. Chambers, who dwelt on the better understanding and the improved division of activities between the Northern and Southern Sections and between the Association and the Institute Chapters. The secretary announced the decision of the executive boards to confine the Saturday morning session to architects only, as an executive session, their rule that all individual resolutions go through the resolutions committee in complete written form, and the appointment of the 1936 Convention committee with Harris Allen, chairman, and John K. Ballantine, Jr., assistant.

Committee reports followed. The professional relations committee (Lester Hibbard, chairman) reported the establishment and publication of standard fee system and standards of practice (see ARCHITECT AND ENGINEER, August 1935). The financial relations committee (F. H. Reimers, chairman) reported the satisfactory agreement with the State Veterans Welfare Board for loaning on architects' plans, and prospective arrangements with banks—emphasizing the effective assistance given by the Associated General Contractors and the Producers' Council Clubs.

The recognition of architects' services by the F.H.A. was noted, and Charles Masten explained the formation of a Federal Savings and Loan Association in San Francisco, with some architects as directors and on the Appraisal Board. The public relations committee (C. H. Miller, chairman) reported series of broadcasts by architects, accompanying press items, and prospect of newspaper space through F.H.A. activities. The governmental relations committee (R. H. Orr, chairman) explained recent legislation in California which left the architectural profession in "statu quo" after a number of bills, not originated by architects, failed to pass. The convention passed a resolution from this committee appointing a permanent statewide legislative committee to study and keep informed of proposed legislation affecting architects and building construction. The report service committee (H. J. Michelson and R. H. Orr, chairmen) reported good returns and publicity value from the two services conducted by Architects Reports in the north and the Southwest Builder & Contractor in the south, and a resolution was adopted appreciating their services to architects.

The afternoon session Friday was started with George D. Riddle presiding, who introduced Burt L. Knowles, National Director of the Associated General Contractors of America, now touring the country. Mr. Knowles delivered an eloquent address stressing the friendly relations existing and desirable between architects and contractors, and pointed out what he considered were harmful effects on the building industry of certain W.P.A. policies. The chair was then turned over to Harris Allen to conduct an Open Forum, which included discussion of unification progress, following a report by Robert Orr; of points about architects' co-operation with F.H.A., explained

by Albert J. Evers of plan requirements by the Veterans Welfare Board, reported by William I. Garren; of Building Officials' experience with building codes and plans submitted, reported by J. C. Longueville; and some discussion about the proposed Uniform Code, which led to an announcement that the S.A.C.A. Code committee would request the State Chamber of Commerce to appoint northern and southern committees to devote a week or more in the near future, for consideration of the Code in its present state, and a definite report to the editors.

A garden tour through some of the beautiful Montecito estates, arranged by Miss Pearl Chase of the Community Arts Association, occupied the time until evening.

Another pleasant social hour, accompanied by charming Spanish music, preceded the Convention banquet. Chairman Winsor Soule introduced the speakers—Assemblyman Alfred W. Robertson, Senator Edgar W. Stow, Mr. L. Deming Tilton (Director of Planning for California), and Mr. Jere Hille (So. Cal. District Manager for the Veterans Welfare Board) with Mr. Manley Shulberg (Appraiser for the Board).

At the executive session Saturday morning William I. Garren presided. Besides action concerning various internal Association policies, resolutions were passed urging that the restoration of La Purisima Mission at Lompoc be completed; that enforcement of the State Highway Act be extended to minor highways, with the guidance of a trained Landscape Architect for roadside planning and planting; that the State Immigration and Housing Commission take steps to see that the State Housing Act be more adequately enforced; and thanking Santa Barbara officials and individuals for their help in making the Convention a success.

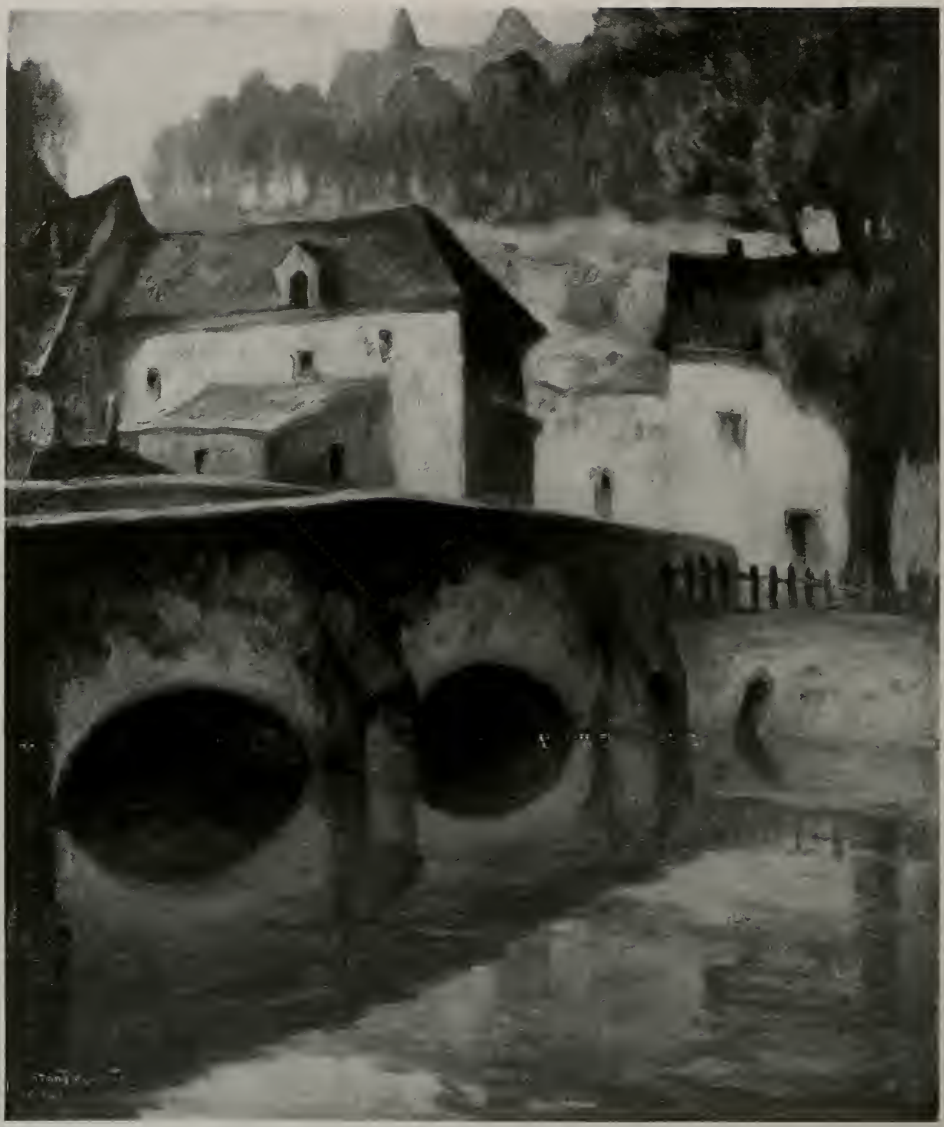
Another garden tour, this time through the picturesque Hope Ranch Park, entertained those delegates and ladies who did not enter the golf tournament at La Cumbre Country Club—where the Golf Dinner and Jinks were held, Harold Burket ably presiding, and Abe Appleton, assisted by Harris Allen, with various Volunteer Victims, offering a "Major Bowes Amateur Hour for Architects" which revealed unsuspected talents and hobbies. The presentation of golf prizes, tokens of friendship offered by a number of building material firms, completed the evening, and the Convention.

The new officers for 1936 are as follows:

State President, William I. Garren, San Francisco. Vice President, Lester H. Hibbard, Los Angeles. Secretary, Harold C. Chambers, Los Angeles. Treasurer, Otto Hintermann, San Francisco. Ex Officio, David J. Witmer, Regional Director A.I.A.

Southern Section: President, Lester H. Hibbard, Los Angeles. Vice President, George D. Riddle, Long Beach. Secretary, Harold C. Chambers, Los Angeles. Treasurer, Robert H. Orr, Los Angeles. Ex. Bd., Louis J. Gill, San Diego; Henry C. Newton, Los Angeles; W. S. McCay, Pasadena; A. M. Edelman, Los Angeles.

Northern Section: President, William I. Garren, San Francisco. Vice President, Harry I. Michelson, San Francisco. Secretary, Ellsworth E. Johnson, San Francisco. Treasurer, Otto Hintermann, San Francisco. Ex. Bd., Harry J. Devine, Sacramento; Charles F. B. Roeth, Oakland; John K. Ballantine, Jr., San Francisco; Roland I. Stringham, San Francisco.



Beauty

● *Landscaping, Adobe Walls and Rustic Gates Lend Attractiveness to New Road to San Juan Bautista*

UPON the completion in 1932 of the San Juan Grade elimination project north of Salinas, California, the picturesque mission town of San Juan Bautista found itself some three miles off the main traveled Coast highway. The motorist wishing to visit the historic mission in the town was compelled to travel over the old and dangerous San Juan grade, or over an old winding graveled county road, known as the "Rocks Road" because of its origin at the Pinecate Rocks through which the new Prunedale Cut-off runs.

The motorist from the south or the Monterey Peninsula district, going to the San Joaquin Valley via the Pacheco Pass, was also obliged to travel over this same grade, or an inferior county road, or go on to Gilroy and thence over the Pacheco Pass.

In order to provide a somewhat better connecting road from the Prunedale Cut-off to San Juan Bautista, the 1933 California State Legislature made the above-mentioned "Rocks Road" a part of the state highway system, and it was immediately temporarily improved by applying an oil and screenings seal until a more satisfactory connection could be provided.

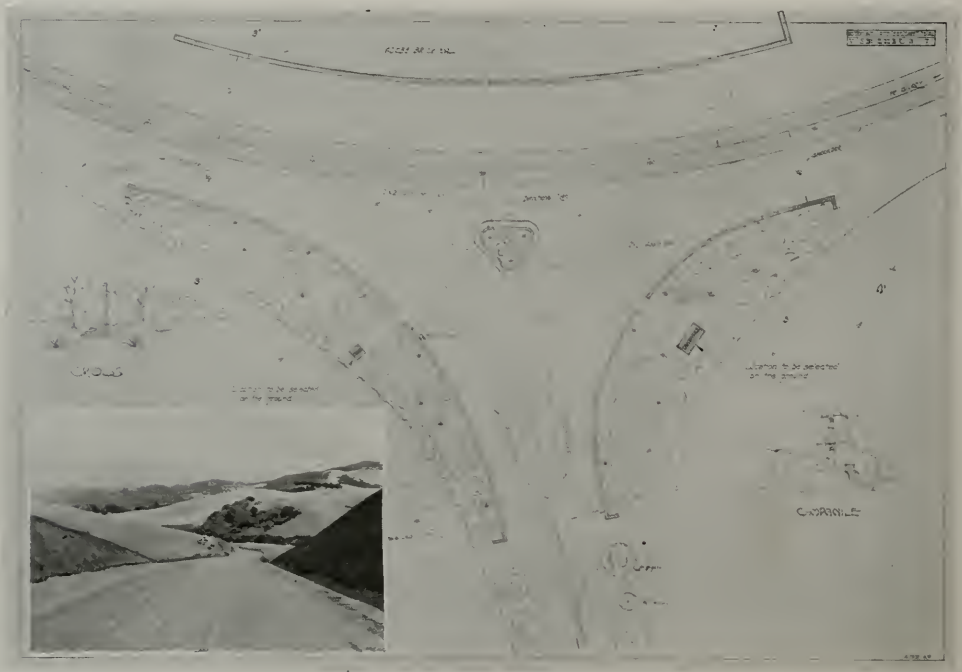
Led by Father Caffrey of the Mission San Juan Bautista, public spirited citizens asked the Highway Commission to provide a more direct and adequate connecting road. As soon as funds were available the commission acted favorably upon this request and made the necessary allocation during the past biennium for the construction of such a connection, which is now completed and opened to traffic.

This connection, 2.6 miles in length, known as the "Rocks Road," runs easterly from a point on the Prunedale Cut-off, two miles northeasterly from the Pinecate Rocks, to the town of San Juan Bautista.

A feature of the work, when completed, will be the landscaping of a broad "Y" intersection with the Coast highway. The central portion of the "Y," between the traveled ways, has been left a foot or two above the road bed and will be enclosed with an adobe wall and rustic gates typical of the Spanish motif. Within this wall will be placed an appropriate directional marker indicating the San Juan Mission.

Along the outside edge of the two entrances, adobe walls will also be constructed. Back of these walls a generous right of way has been obtained, with the intervening area somewhat raised above the roadbed and will be planted with appropriate trees and shrubs. Within the park area to the north will stand a Campanile of mission design and in the southerly park area a large rough hewn redwood cross, both features being emblematic of the San Juan Mission to which the road leads.

CROSS AND CAMPANILE will mark this intersection of the new road to the Mission town of San Juan Bautista with the Prunedale cutoff, San Benito County, California
(Courtesy California Highways and Public Works)



BEAUTIFICATION PLAN to include emblematic structures and adobe wall at intersection pictured above. Inset shows portion of new State Route to San Juan Bautista

Housing

by E. P. Conser

● *Replacement Work in Los Angeles Apartment Buildings Urged by Association Executive*

THOSE who study construction records and follow building trends closely usually look first at residential activity. An ambitious public works program, creation of a new civic center, erection of new office building skyscrapers, may swell the value of building permits, but there is only one sound gauge of a permanent trend in construction activity, and that is construction of single family residences.

When people start building their own homes or when a demand arises for new homes, we can be sure either that people have more money or they are willing to spend more money, or old homes have deteriorated and must be replaced by new ones, or that families which have been living together are ready to branch out and establish their own homes or that new families are coming into the community and an increase in population is taking place—it may be any one of a combination of all of these factors which underlies an increasing volume of new home construction.

In any event, when construction of single family homes is increasing it means that the community is expanding, and in ratio to the extent of this movement, a demand will soon arise for new stores, new theaters, new service stations, new office buildings and new postoffices to serve the growing community.

Before going into a review of the recent trend in residential construction activity, let us consider some of the important underlying factors which cause this trend.

Demand for new housing accommodations arises when the supply of accommodations becomes inadequate—and not before.

In the case of apartment houses, the vacancy for the ten-year period prior to 1934 averaged approximately 22%. This means little until we consider the fact that most of such buildings are predicated upon an average vacancy of not more than ten per cent. Further, by analysis of price trends, we find that a 7% vacancy is the stabilization point beyond which prices rise and fall. You can appreciate then, that apartment rentals have been dropping, and property values declining accordingly throughout this period.

Last year surveys conducted every 60 days by the Apartment Association show an average vacancy of less than twelve per cent. This year, for the first time in 12 years, apartment vacancies were reduced below the stabilization point, and in February were at a low of 4%. The average for the year will be less than ten per cent.

*From an address before the Construction Industries Committee, Los Angeles Chamber of Commerce. The author is secretary-manager of the Apartment Association of Los Angeles.

We can say definitely that rental rates have been rising since this time last year. During the summer the San Diego Exposition has been most helpful in maintaining occupancy at a point which may be considered normal for the first time in many years. With vacancy as of August 15 reported at 8%, there is still an ample supply of apartments, supplemented by still greater excess of hotel space, to accommodate the usual seasonal influx of temporary residents. We may be certain, however, that the housing business, as a whole, is facing its best season since 1924.

It is interesting to note here that the occupancy of bungalow courts, flats and single family homes follows a trend similar to that of apartments, except that the seasonal variation is nominal compared with apartments, and the vacancy lower in bungalow courts, still lower in flats and at the lowest point in single family homes, where it reaches a point approaching two per cent during the peak season and varies little during the year.

It is interesting to note that the up-turn in apartment house occupancy began late in 1932, and the same trend is carried out in other forms of dwellings, begining in 1933.

The vacancy of which we speak represents in effect the surplus of housing accommodations over the requirements of both permanent and temporary residents.

To any person familiar with the housing industry, and this is borne out by investigation of governmental agencies, there are residing today in multiple-family dwellings an enormous back-log of families awaiting the first opportunity to move into a home of their own.

Why don't they move now? Why isn't building activity in single-family homes many times the volume of today? Why are we building less new accommodations than we did in 1919—15 years ago? Here is the reason.

Comparing building costs as given by the survey of the Federal Reserve Bank of New York, with rental rates, as indicated by the U. S. Bureau of Labor Statistics, we find that since 1923 building costs and rental rates have gone their own separate ways, and while the depression had a similar effect on both, rentals have yet to regain some of their lost ground before there can be any sound advance in construction for investment.

Using the 1914 index, rentals today are approximately at the level of 1914-18 — twenty years ago. In Los Angeles they are nearly 15% lower than 20 years ago.

While building costs have receded from the high levels of 1926-29, they are still nearly 100% higher than in 1914. If it was profitable to build for income purposes during the years 1914-24, which we know to be the case, and during which time the rental trend followed closely the trend in cost of building, then the gap between the cost of building today and rental prices must be more nearly closed. Although it is difficult to state just what increase in average rental income is necessary to permit profitable new construction of income properties, it is indicated the increase from depression levels must be somewhere *between forty per cent and one hundred per cent.*

There is a sound demand for single-family homes today because the over-supply of past years is nearly absorbed. Again, many people are able to enjoy a little luxury over and above the amounts they now have to pay for rent. But this trend in home construction can continue only as more people can afford to own their homes.

The one thing that will bring about a sustained demand for single-family home construction and the only thing — will be substantial increase in the cost of rent.

On a national scale rents have declined approximately 40% and are still near the

bottom. In Los Angeles the level of rents during 1921 to 1925 cannot be considered to be sound, and unquestionably was due to the impetus given to rental prices by sudden gains in population. But rents can be said to have reached a sound basis, in accordance with economic conditions in 1927. From this level they have been reduced nearly 50% and are still near the bottom. We know in Los Angeles that rentals have increased during the past year, but thus far that increase has been nominal, and from all indications has not as yet averaged ten per cent.

We are all interested in new construction, and new construction, as far as single-family homes are concerned, will come in substantial volume as soon as rents increase. People who are thinking of building today are still deterred by the fact that they can rent so cheaply, although the accommodations are less desirable than private homes.

Young couples who have passed five depression years in apartment houses are anxious to get into homes of their own as soon as they can afford it. But when they can still get a roof over their heads for $25.00 a month, including utilities, laundry and a maid to sweep the kitchen, it is not common sense to venture into a home of their own when that home will cost not less than $50 after they have paid the charges now included as rent.

There is so much talk of home construction that it is entirely logical that the uninitiated and the speculators should think as well in terms of multiple-family construction. But with building costs today nearly 100% higher than 20 years ago, and with rental income from residential properties at the same level, none but the ignorant or the unthinking would venture to build a so-called income property, knowing in advance that his investment would be a losing proposition, except for the contingency that rents will immediately advance.

A recent upward trend in occupancy of all types of family accommodations, as well as other indexes of population gains, indicate there will be an increase in the permanent population of Los Angeles this year of at least 10,000 families. Let us assume these families are all to be placed in new housing. What type of housing will best serve the needs of the community?

Suppose we put them in a government low-cost housing project, consisting of multiple-family units built at an average cost of $800 per unit, including materials and labor, or a total construction cost of $8,000,000.

On the other hand, assume that private capital builds apartment houses of 30-units, the average size in the city. These accommodations will absorb from the distress market 335 vacant lots out of some 300,000 already subdivided in the city, most of which are on the distress market and pressing to be sold for any type of use which will contribute toward paying the taxes. According to building permits, the cost of multiple-unit construction averages at the present time slightly in excess of $2,000 per family unit, and on this basis materials and labor consumed would total some $20.-000,000 or about 150% more than if these families were accommodated in low-cost housing projects.

Now suppose we were to provide single-family homes for this increased population. Out of 300,000 vacant lots in the city 10,000 would move off the distress market and into private hands, instead of the 335 for apartment accommodations. A review of building permits indicates that it costs approximately 60% more to produce a single-family unit than a unit in a multiple dwelling. Therefore, these 10,000 families would consume a total of $32,000,000

in building materials and labor, as compared with the $20,000,000 for apartment construction.

Construction work on 10,000 new homes would keep a lot of building contractors busy most of the year. The sale of 10,000 lots would be a boon to the real estate market and would spread sales among realtors throughout the city. It is reasonable to believe that every section of the city would be benefitted, and not just one or two isolated spots.

So much for new construction. We have seen the effect of over-financed building of multiple dwellings from 1926 on. That era could be repeated if spectators were permitted to misinterpret the facts surrounding the present occupancy conditions in multiple dwellings as well as single-family homes. But none of us who are interested in the welfare of our city and are selfishly interested in the real estate business, the mortgage business, the construction industry or the housing industry will permit a repetition of that era.

The mere fact that these structures were over-financed has caused enormous financial losses and has resulted in most properties being allowed to deteriorate without any attempt at proper maintenance since they were built. Add to this the fact that they were all hastily built, if not flimsily built, and we can appreciate the fact that hundreds of such structures are in dire need of complete rehabilitation. There has been a minimum of repairs and replacements during the depression, and because rents are still at near depression levels (the volume of modernization work in apartments has scarcely been touched) we will find improvement of existing structures will more than pay its way. Then the present obstinate opposition to the expenditure of any funds for capital improvements will disappear.

As an indication of the need for replacement work in apartment houses, consider the refrigeration systems alone. Apartment construction reached a peak some 12 years ago. Eleven years is almost a maximum life for unit refrigeration systems, and after five years I doubt if there is a system which does not give almost constant trouble. From the present time forward there is a continuing need for replacement of refrigeration systems, in accordance with the volume of construction of 8 to 12 years ago, or an average of over 30,000 units a year, involving an annual replacement cost of not less than $1,250,000.

The normal life of various articles of apartment furniture of an average quality is from 4 to 11 years, and averages as a unit 7 years. Much apartment furniture has not been replaced in 12 years, and has been patched and scrubbed and polished until it is in hopeless condition today. That the replenishment of furniture in apartments already is showing a healthy increase is indicative of the approaching replacement of other less perishable items.

These are but a few indications of the need for extensive and intensive modernization work in this field. I could go on to point out the crying need for new decorations to create the most efficient use of light, and the need for embellishments in architectural design which could be applied to at least the fronts of our present shoebox buildings.

« « « « With the Architects » » » »

TELEPHONE BUILDING

The Pacific Telephone and Telegraph Company has announced it will spend $250,000 for a new exchange and office building at the intersection of Otis and McCoppin Streets, San Francisco. Plans are being prepared by the company's engineering department. Mr. Cobby, who was for many years head of the architectural office of the company, was recently given his retirement.

The new building is being designed as a six story Class A structure but for the present only two stories and basement will be built. A complete steel frame will be used with exterior walls of pressed brick and terra cotta. Bids for the general construction will be taken about the first of the year.

L. H. NISHKIAN BUSY

New work in the office of L. H. Nishkian, structural engineer, Underwood Building, San Francisco, includes the structural design of a reinforced concrete auditorium for the Standard School District, cost $100,000, Charles H. Biggar, architect, of Bakersfield; branch bank building at Daly City for the Bank of America; one story reinforced concrete addition to the Ressitar Bros. garage at Watsonville and a store building for the Bank of America at Napa.

WILL CARRY ON FOR MR. SYMMES

When Edwin J. Symmes passed away in Bakersfield several weeks ago there was considerable unfinished work in his office. Mrs. Symmes wishes to go on at least with the incompleted work and she has commissioned W. C. Hays and Ira W. Hoover to carry on. Much of Mr. Symmes' work consisted of new school buildings and improvements to existing structures. Mr. Symmes was at one time employed in the office of Mr. Hays.

MACHINE SHOP FOR SCHOOL

Messrs. Miller and Pflueger, architects of San Francisco, are preparing working drawings for a reinforced concrete machine shop at the George Washington School, San Francisco.

The same architects have recently taken bids for the construction of a new residence in San Francisco for an unnamed client.

PRAISES SKYSCRAPER ARCHITECTURE

American skyscrapers are a definite form of art that expresses the work life of the country, according to Dr. Alfred Neumyer, professor of history of art at Berlin University, who arrived at Mills College recently after a tour across the country.

Dr. Neumyer declares that the skyscrapers are America's definite contribution to architectural art. While at Mills College, he will lecture on the history of art of the nineteenth and twentieth centuries as well as museumship.

Before going to the University of Berlin, Dr. Neumyer was leader of the educational office of the State Museum in Berlin. He is a novelist, playwright and newspaper writer.

PERSONAL

Wm. H. Knowles, 369 Pine Street, San Francisco, has been granted a provisional certificate to practice architecture by the California State Board of Architectural Examiners, Northern District, State Building Annex, San Francisco.

Howard G. Elwell has moved from the town of Bell to Room 1005 Architects' Building, Los Angeles.

John C. Page has been appointed chief of the engineering division of the Reclamation Service.

Arthur Brown, Jr., accompanied by Mrs. Brown and their two daughters, are spending a couple of months abroad. Mr. Brown attended the Congress of Architects in Rome as a representative of Northern California Chapter, A.I.A. The Browns will return in November.

Robert W. Forman, architect, of Oakland, was married recently to Miss Lillian E. Friedlaender of San Leandro, the culmination of a three months romance.

LOS ANGELES OFFICE

The Architect and Engineer has arranged to have regular representation in Los Angeles at the Building Material Exhibit in the Architects Building, 832 W. Fifth Street. Telephone, Mutual 6306.

SACRAMENTO STATE BUILDINGS

Modern treatment in design will characterize two new office buildings which the State of California will build in Sacramento next year at an approximate cost of $1,200,000.

Twin structures are to be erected on the southwest and southeast corners of Twelfth and N Streets, fronting Capitol Park.

The building at the southwest corner will house the department of public works, with its divisions of highways, water resources, dam inspection and architecture.

The other will house the department of motor vehicles, inclusive of the division of registration, the California highway patrol and other law enforcement agencies and the division of adjustments and operators' licenses.

After the construction of the new buildings, the present Public Works Building at Eleventh and P Streets, also shared by the division of motor vehicles, will be used to house general state offices, probably including the new department to administer the unemployment insurance act.

Growth of the two departments in the past and the additional duties imposed upon them by recent legislation has made the construction of the new buildings absolutely imperative.

The public works department is concentrating all of its draughting staff in Sacramento, and also the division of architecture, through additional state building work and the administration of the school building safety law is back to full strength A large crew of Federal engineers working on the Central Valley Water Project will have to be housed.

Each building will be set back twelve feet from the streets and adjoining structure, and will have a frontage of 240 feet.

PROFESSOR GREGG HONORED

John W. Gregg, professor of landscape design at the University of California, has been appointed landscape architect for the All-American Canal to be built at Calexico, California, as part of the Colorado River project.

Notice of the appointment was received from Dr. Elwood Mead, who at one time was professor of irrigation at the University of California and who is now United States Commissioner under the Department of the Interior.

Professor Gregg will landscape a strip of land several miles long and develop recreational features on both sides of the canal.

Professor Gregg is familiar to readers of this magazine, he having served as an associate editor in landscape architecture, for a number of years.

SAN FRANCISCO MUSEUM OF ART

Exhibitions at the Free Gallery, San Francisco Museum of Art, the latter part of the current month include Great Portrait Painting, Sunday, October 27, with gallery talk by Claudia Davis, and Eighteenth Century Portraits, October 30, with gallery talk by Katherine Field Caldwell.

Current exhibitions include contemporary sculpture, through October 20; Rivera painting and drawings through October 31 and French impressionists, to November 3.

The exhibition, "Thirty Years of Sculpture in California" has occasioned much interest. Many of the contributing artists are especially concerned with mural decoration, notably wood carving.

ARCHITECTS VISIT BRIDGE

Members of American Institute of Architects, State Association of Architects, and Producers' Council Club, were guests of the Columbia Steel Company on an inspection trip of the San Francisco Bay Bridge, September 26.

E. J. Schneider, manager of the bridge department of the Columbia Steel Company, which is supplying and erecting all the steel and cables for the bridge, acted as host. The inspection proved most interesting. Employees of the company explained how splices are made on the wire and how it is wound on the spools prior to its delivery at the bridge for spinning.

NEW OREGON STATE CAPITOL

An allotment of $1,575,000 from the Federal works-relief appropriation for a new State Capitol building in Salem is among the major items of work approved by PWA. The building will cost $3,500,000, the state having appropriated $1,925,000.

The old capitol was destroyed by fire last April 26.

An architectural competition is being advocated.

S. F. ARCHITECTURAL CLUB

The regular meeting of the San Francisco Architectural Club was held October 2 in the clubrooms at 130 Kearny Street. Discussion of plans for a Hallowe'en dance, scheduled for October 26, as well as a number of other topics, occupied most of the business session. President Otto G. Hintermann presided.

Chapter and Club Meetings

NORTHERN CALIFORNIA CHAPTER

The monthly meeting of Northern California Chapter, A.I.A., was held at the Plaza Hotel, San Francisco, September 24. The meeting was convened at 6:30 P.M. with the president, Albert J. Evers, presiding.

The following were present: Harris C. Allen, Abe Appleton, John Bakewell, Jr., E. Geoffrey Bangs, Earle Bertz, Morris M. Bruce, Will G. Corlett, Albert J. Evers, Henry H. Gutterson, Raymond W. Jeans, Ellsworth E. Johnson, Mark T. Jorgensen, George R. Klinkhardt, Chas. F. Maury, Harry M. Michelsen, James H. Mitchell, Howard Moise, Irving F. Morrow, John B. McCool, George B. McDougall, Gwynn Officer, Keith Ponsford, Robert Stanton, Roland I. Stringham, Stanton Willard, Alfred C. Williams, John Davis Young.

A study of fees leading to conferences with a group from the Structural Engineers Association of Northern California upon an agreeable basis of fees to be paid by architects and engineering services has been a recent activity of the Committee on Practice, it was reported by the Chairman, Mr. Gutterson. The grounds upon which the engineering group based a proposed graduated schedule was explained and the existing conditions which prompted it were commented upon.

The matter was discussed by various members, with no unanimity of opinion. By motion of Mr. Bangs, seconded by Mr. Stringham, the matter was laid on the table for future consideration with the understanding that the committee would continue upon the work.

President Evers told of the recent request of the Institute to each of the Chapters that they undertake the raising of a fund equal to $2 per Institute member, as a contribution to enable the Institute to renew curtailed activities. In response, the directors of the Chapter have forwarded $188, as its share toward this working fund and have collected the per capita amount from those who voluntarily subscribed toward reimbursement of the amount to the Chapter.

Upon motion of Mr. Stanton, seconded by Mr. Bertz, it was voted that each member be assessed $2, for this fund and that contributors to date be properly credited as paid. It was further instructed that associates be requested to make voluntary contributions but not be assessed.

Recent accessions to membership were announced as follows:

Robert Stanton, A.I.A., Keith Ponsford, Associate and Lyle N. Barcume, Associate.

Messrs. Stanton and Ponsford were present and acknowledged the introduction.

The death of Edwin J. Symmes, A.I.A., was announced as having occurred September 10, 1935, and a committee composed of Messrs. Morrow, Perry and Hays offered the following resolution which was unanimously passed.

WHEREAS

Our late colleague Edwin J. Symmes enjoyed long and universal esteem as architect and citizen; and

WHEREAS

Not only his immediate associates, but his profession and his community find themselves poorer because of his loss; now therefore

BE IT RESOLVED

That the American Institute of Architects, Northern California Chapter, at its meeting of September 24, 1935, formally record the sincere regret it feels at his passing; and further

BE IT RESOLVED

That this resolution and the condolence of the Chapter be conveyed to his bereaved family.

Mr. Allen presented a statement in which he had set down his thoughts on the recent trend of the Honor Award exhibitions. In his opinion, these have disintegrated from the original form and intention of a display for recognition of architectural merit into narrow competitive lines. It also was regretted that public presentation of awards such as had taken place in Temple Emanu-el have been dispensed with.

Mr. Allen's comments were accepted with appreciation and it was instructed that the full copy thereof be sent to David J. Witmer, Chairman of the A.I.A. Honor Award Committee, and to the Chapter Exhibit Committee.

Mr. Evers spoke of the spreading use of A.I.A. as a symbol by associates and prompted those present that this designation is reserved solely for Institute members.

The list of candidates for office for 1935-36 was presented by the nominating committee, John Bakewell, Jr., chairman; and accepted as follows: President, Will G. Corlett; Vice-President, Warren C. Perry; Secretary-Treasurer, James H. Mitchell; Directors, Albert J. Evers—3 years; Edward F. Frick—3 years; Gardiner A. Dailey—2 years.

These will be voted upon at the October meeting.

A letter from the California Society of Mural Artists was read which requested that architects give due consideration to local talent in the selection of artists for mural decorations.

No action was taken in response to the suggestion of Mr. Evers, that the Chapter start a movement to give support and force to the State Housing Act. He stated that the act had become a dead letter in many localities.

With the conclusion of business affairs, Mr. Moise gave a very interesting account of what had transpired in the 67th A.I.A. Convention which he had attended as delegate from this Chapter. His personal impressions and, further, a few words on the continuation of his trip eastward, proved highly entertaining.—J.H.M.

COMPETITION FOR OREGON CAPITOL

The Oregon Chapter, A.I.A., met the evening of September 17 at the Rathskeller. After dinner the meeting was called to order with President Aandahl in the chair.

Those present were: Messrs. Aandahl, Whitney, Knighton, Herzog, MacPike, Brookman, Schneider, Dougan, Jones, Dukehart, Sundeleaf, Foulkes, James, Jacobberger, Crowell, Bear, Belluchi, Parker, Doty, Johnston, Clausen, Morin, Wick, Stanton, Forrest, Smih and Wardner. H. Abbott Lawrence was a visitor.

It was announced that a lecture on acoustical treatment will be given at the Multnomah Hotel on November 11th. Regional Director Crowell spoke briefly. President Aandahl reported for the executive committee.

It was moved by Harold Doty, seconded and carried that the Chapter sell 100 tickets at 50c each to hear Mr. LeCorbusier, French architect, speak in Portland in December. Mr. Belluchi was appointed chairman of a committee to handle this matter.

Mr. Parker, chairman of the public works committee, made a report on the Capitol building situation, and read that part of the state planning board's report to the Governor recommending a competition and a method of procedure.

On account of a floor show in the room adjacent to the meeting, some of the older members seemed to be unable to concentrate on business, so the president moved the meeting bodily to the office of Doyle and Associates. After calm had been restored, President Aandahl gave an interesting resume of Chapter activities relative to the Capitol from the time of the burning of the old building to date.

An extended discussion followed, concerned chiefly with the recommendation of the planning board relative to competitors, which report—previously endorsed by the Chapter — if adopted, would probably eliminate from the competition, younger men of a limited experience.

Mr. Jones moved that the Chapter go on record as favoring a competition for the Capitol building, limited to architects who were registered in Oregon and were residents of Oregon at the date of the burning of old Capitol building. Seconded by Mr. Whitney. Mr. Jacobberger moved an amendment that the competition be conducted in accordance with A.I.A. requirements, and the motion was carried.

Mr. Sundeleaf moved that the secretary write the State Board of Control, advising of the Chapter's action in reference to a competition as recommended by the planning board. Seconded and carried.

It was stated that, inasmuch as the Chapter has gone on record as favoring a competition for the Capitol building, all members of the Chapter are requested to refrain from soliciting the job, since such soliciting would be opposed to the best interests of the Chapter. With the consent of the meeting President Aandahl directed that this be spread in the minutes.

Applications for Associateships were received from H. Abbott Lawrence and Robert W. Turner and Sidney B. Hayslip. Privileged communications will be received by Secretary Wallwork until Oct. 17th.

SOUTHERN CALIFORNIA CHAPTER

At the September meeting of Southern California Chapter, A.I.A., J. J. Backus, superintendent of the Los Angeles Department of Building and Safety, was presented with a certificate of life membership in recognition of his services to the profession.

The presentation was made by Robert L. Burns, president of the Los Angeles City Council. A bouquet was presented to Mrs. Backus by Mrs. Edgar F. Bissantz. Mr. Backus was appointed superintendent of the department on January 3, 1905, and has held that office continuously ever since. He has been a member of the Chapter for a number of years.

Sumner Spaulding, president of the Chapter, opened the meeting and turned the gavel over to John C. Austin, who acted as chairman of the evening. A reception was held at 5 o'clock, followed by dinner and dancing.

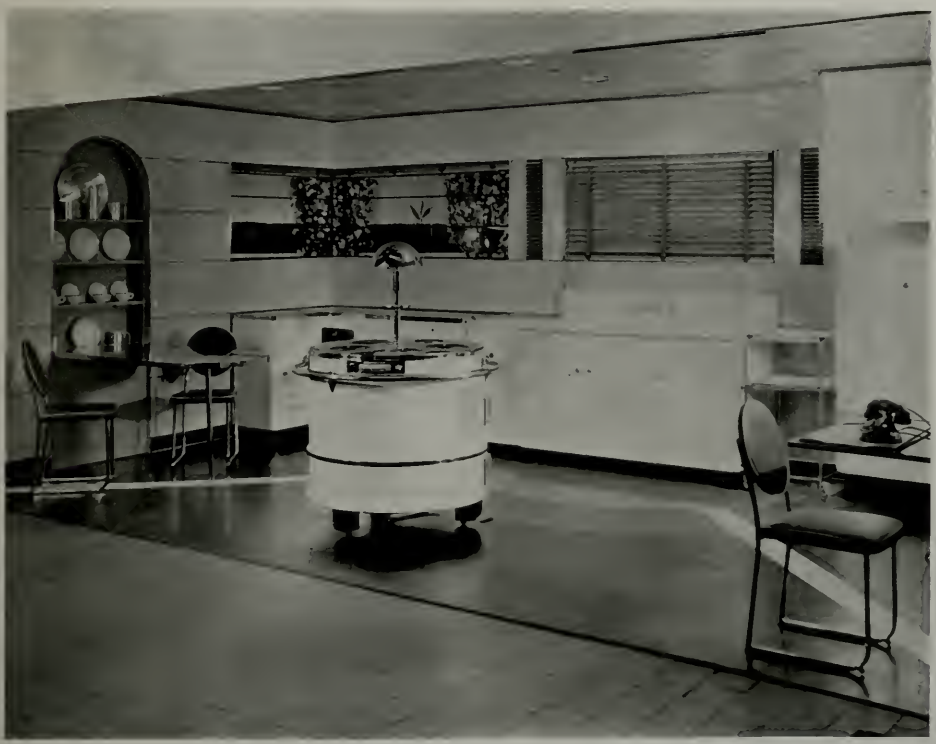
SOMETHING NEW IN PLUMBING FIXTURES

Entirely new style conceptions in design and coloring of plumbing ware and bath room arrangement are shown in the accompanying view of a model bath room exhibited by the Briggs Manufacturing Company at the Master Plumbers' show in Chicago recently.

Briggs new ware is made of drawn steel while advances in the art of ceramics makes available any color or color combination desired. Generally speaking, the new ware is streamlined and ultra-modernistic in every detail. Building stylists believe that this new mode in the styling of bath rooms and kitchens will provide an important appeal and stimulus in reviving activity in the construction industry.

How the plumbing industry is providing the impetus for a revival of building activity through the creation of new style appeals in the kitchen and bath room, is shown in the accompanying view of a model kitchen. The cabinet sink is an example of drawn metal construction which has started a new trend in plumbing style and utility.

MODEL BATH ROOM



MODEL KITCHEN WITH CABINET SINK OF DRAWN METAL

The sinks are available in any color or color combination desired. The enamel is acid resisting. The small unit at the left of the sink is a dish washing machine. At the right of the sink is a refrigerator.

In the foreground is a round electric stove which rolls on castors and permits cooking from any angle. The new drawn metal plumbing ware and stove proved to be the outstanding sensation of the Chicago plumbing show.

AMERICAN SOCIETY CIVIL ENGINEERS

The seventh annual convention of the San Francisco Section, American Society of Civil Engineers, will be held at the Sir Francis Drake Hotel, San Francisco, Friday, November 1. A unique announcement of the event gives the specifications and location of the various technical division meetings as follows:

Bridge Division—Contract (Bring your own system) Games Room.

Hydraulic Division, Cocktail Room.

Culinary, Empire Room.

Catwalk Division, Ball Room.

Legislation, Lobby.

Finance, 526 Rialto Building.

The nominating committee has reported in favor of the following officers for next year: President, Walter L. Huber; Second vice presidents, A. J. Cleary, F. C. Herrmann, Fred C. Scobey and Ralph G. Wadsworth. T. J. Corwin, Jr., will continue as secretary-treasurer.

At the last meeting of the San Francisco Section some time was given over to reports and remarks on California legislation as affecting the civil engineer by Walter L. Huber, chairman of the legislative committee; L. H. Nishkian and H. J. Brunnier. Mr. Nishkian's remarks will interest both architects and engineers. He said:

"At each session of the legislature the act licensing architects always comes up for amendment. Such amendments concern the engineer very seriously. Contrary to general opinion among civil engineers, these proposed amendments are of far more concern to the civil engineer than they are to the structural engineer because practically always the architects are willing to exempt the structural engineer. It behooves the civil engineer to be alert and to see that the proper practice of civil engineering is not limited in any way.

"In the last California legislature it was proposed to exempt structural engineers and only such civil engineers as were adjudged by the Engineers Registration Board competent to design buildings. We objected to the provision for two reasons. First, there are no reasons of public safety for any legal restrictions to be placed on the practice of competent civil engineers, and second, we objected to any attempt to regulate the practice of civil engineers by provisions in an act regulating the practice of architecture.

"This measure (Senate Bill No. 507) was set for hearing before the Senate committee on governmental efficiency early one morning. The night before, the engineers' legislation committee met the representatives of the architects' and after a long session, the architects agreed to exempt the civil engineers in the same manner as were exempted the structural engineers. The following morning, however, just previous to the committee meeting, they informed us that they had changed their minds. We, therefore, went to the committee room not knowing what to expect for we were aware that the architects had employed two high powered lobbyists. When the bill came up it was proposed that all amendments be voted on without reading or discussion. Mr. Kennedy, our representative, prevailed on the committee to read the amendments so that we would know at least what they were. They were read, among them the amendment by Senator Scallin of Sacramento, exempting the civil engineer. At this point, Mr. Wm. Garrin, representing the architects, got the floor and stated that such an amendment would permit every surveyor to practice architecture. Mr. Scallin accepted this statement and withdrew his amendment, stating that he had been misinformed. The committee then decided to take a vote without further discussion. Efforts of Messrs. Kennedy, Brunnier, Huber, and others of our committee to get the floor were futile. We felt that we had lost the fight as everything seemed to be stacked against us. Quicker than I can tell it, the vote was taken and to the surprise and amazement of all of us, the bill was killed and we were safe for another two years."

ENGINEERS' STATE CONVENTION

The Structural Engineers of California are holding their annual State convention at Fresno October 18-20. Details of the meeting will be published in the November issue of THE ARCHITECT AND ENGINEER. Wm. H. Popert is chairman of the program committee. The main business of the convention will be a report and discussion on "Standardization of Engineering Fees and Practice." Headquarters at the Hotel Californian.

BRANCH BERKELEY LIBRARY

James W. Plachek, architect of Berkeley, is compiling plans for a one-story Spanish style branch library building to be erected at Hopkins Street and the Alameda, Berkeley, at an estimated cost of $36,000. Construction will be of reinforced concrete with terra cotta tile roof.

FEDERAL ALLOTMENTS, NORTHERN CALIFORNIA

PWA allotments for public work in Northern California were announced by President Roosevelt the first of the month and they have already had a stimulating affect on the building industry.

The grants totaled $11,024,337 financing 147 projects.

The list of projects includes the following:

Centerville School, $12,627; Warm Springs Grammar School, $26,831; Alameda County Courthouse, $19,350; Alameda branch library, $29,148; paving work, Oakland, $15,130; street improvements, Oakland, $40,371; San Leandro reconstruction of school building, $49,500; Berkeley library building, $16,167; street paving and drainage, Oakland, $232,565; construction sewer, Oakland, $14,603; Piedmont School building; $27,000; Oakland harbor improvements, $121,855; Alameda electrical sub-station, $87,950; Oakland School, $28,125.

Albany School, $27,000; Amador Valley Joint Union High School, $25,250; Chico High School, $45,000; Chico school district for elementary school building, $39,273; Chico library, $12,170; Arbuckle Union High School, $81,818.

Martinez School, $8591; El Cerrito City Hall building, $10,695; Knightsen School, $10,636; Martinez School, $23,727; Selma School, $28,215; Prairie school district, Fresno county, $20,440; Fresno City High School, $264,600; Mendota Elementary High School, $14,308; Reedley Joint Union High School, $45,000; Clovis High School, $48,204; Orick school district, $13,770; Eureka Municipal Auditorium, $53,181; Bakersfield Union School district, $17,101; Delano High School, $17,951.

Oil Dale Standard School district, $45,000; Arbin Home for Aged, $19,407; Bakersfield Taft Union School, $51,770; Hanford School, $19,371; Hanford Hospital, $42,849; Lakeport School, $13,500; Susanville electric distribution system and transmission line, $44,929; Madera Union High School, $21,005; San Rafael School district, $40,909; Mill Valley City Hall building, $24,300; Mariposa School, $66,236; Ukiah sewage disposal plant, $10,655.

Fort Bragg School building, $8000; Merced School district, $18,900; Hilmar High School, $12,402; Atwater Hospital building, $40,725; Merced School building, $38,025; Dos Palos' water works system, $28,308; Cedarville High School, $22,500; Salinas Hospital additions, $32,832; Salinas School, $54,000; Alisal Union High School, $13,500; Salinas High School, $19,250; Napa School, $11,454; Truckee School, $14,727.

Auburn High School, $28,390; Sacramento Junior College, $221,000; Elk Grove High School, $37,636; sewers for Sacramento, $73,630 and $308,098; Elk Grove schools, $8187; water supply system, Galt county water district of Sacramento county, $24,327; Del Paso schools, $12,638; Walnut Grove schools, $26,182.

Linden—Loan and grant of $30,909 for high school gymnasium and community center.

Stockton—Grant of $30,909 for high school gymnasium and community center; loan and grant of $60,000 for addition to cotton warehouse; $90,000 to sewerage system and sewage disposal plant.

Burlingame—Loan and grant of $87,272, six elementary school buildings.

Millbrae—Loan and grant of $53,922, extensions and additions elementary schools and equipment.

Redwood City—Loan and grant, $34,545, Visitacion Elementary School District school.

San Mateo—Grant, $16,530, San Mateo School District.

Sunnyvale — Grant, $25,602, Fremont Union High School District, library and swimming tank.

Palo Alto—Grant, $12,700, removal and reconstruction gas distributing center and butane gas plant; $218,000, electric power plant and transmission line.

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Shipped ready to install! Ready to provide the best of controlled illumination and draftless all-weather ventilation. Made in one, two, and three-sash units. Multiple sash fully automatic . . . all vents operated collectively by motion of lower sash, which disconnects for independent operation, and reconnects without use of manually operated clutches.

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Section of National DUROLINE Pipe coupling and joint. (Note special highly corrosion-resistant joint compound on end of pipe and on threads.)

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United States Steel Corporation Subsidiary

Los Gatos—Grant, $42,714, Union High School District, school addition.

Red Bluff—Grant, $18,000, Union High School, gymnasium.

Tulare — Grant, $14,829, memorial hall and Civic Auditorium; $108,606, Union High School, school addition.

Watsonville — Grant, $41,478, water distribution mains.

Redding—Loan and grant, $76,364, school.

Yreka—Loan and grant, $54,546, Dorris School District, Siskiyou County Elementary School and auditorium building.

Santa Rosa—Grant, $110,250, County Hospital.

Sebastopol—Loan and grant, $76,364, Union School District, school.

Petaluma—Grant, $8262, Petaluma School District, school.

Sonora — Grant, $20,641, sewers and sewage treatment plant; grant, $15,021, street paving.

Woodland—Loan and grant, $32,727, Clarksburg School District, Yolo county, additions to high school; grant, $13,238, addition to City Hall.

Davis—Loan and grant, $29,091, Davis Joint School District, construction school.

CONTRACTORS MEET IN SAN DIEGO

The fall meeting of the governing board of the Associated General Contractors of America, opened an initial session Monday, September 16, in the auditorium of the Palace of Hospitality on the Exposition grounds at San Diego, with a goodly attendance of construction leaders.

Burt L. Knowles, in his address to the contractors, praised the Public Works Administration and excoriated the Works Progress Administration and its method of conducting construction operations. He referred to Harry Hopkins, head of the WPA, as "a social service worker who apparently has no knowledge of construction." Mr. Knowles ended his speech with a ringing statement that "our industry believes that it has a debt of responsibility to the public. We believe that the public wants to know how this money is being spent, and our industry and our association proposes to tell the public and let the public render the verdict!"

The address of welcome to the contractors was delivered by A. E. Horst, past president of the Association, who spoke in the absence of President Nick F. Helmers who had been detained when the plane in which he was traveling was forced down. Mr. Horst pleaded for an application of the ingenuity which the industry has demonstrated in the design and execution of projects to underlying phases of the construction business. "Problems of market development and market protection," he stated, "are common to the entire industry, and a determination to give attention to

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

In many instances NRA prices are still in force. Another month may find some material changes in price quotations. A 10% reise is being considered. Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $35 to $40 per 1000 laid, (according to class of work).

Face, $75 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.10 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, **$14.00** job cartage.
Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Discount 5%.

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Eliott top gravel, at bunkrs	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.
Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement, $2.25 per bbl. in paper sks.
Cement (f.o.b. Job. S. F.) $2.90 per bbl.
Cement (f.o.b. Job. Oak.) $2.90 per bbl.
Rebate of 10 cents bbl. cash in 15 days.
Calaveras White . . . . . $6.00 per bbl.
Meduse White . . . . . $8.00 per bbl.
Forms, Labors average 25.00 per M
Average cost of concrete in place, exclusive of forms, 30c pe rcu. ft.
4-inch concrete basement floor . . . . . 12½c to 14c per sq. ft.
4½ inch Concrete Basement floor. . . . . 14½c to 16c per sq. ft.
2-inch rat-proofing. . . . . 6½c per sq. ft.
Concrete Steps . . . . . $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 15c per yard.
Membrane waterproofing—4 layers of saturated felt, $4.00 per square.
Hot coating work, $1.80 per square.
Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).
Knob and tube average $7.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 50 cents; clay or shale, 80c per yard.
Teams, $10.00 per day.
Trucks, $18 to $25 per day.
Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.
Quartz Lite, 50c per square foot.
Plate 75c per square foot.
Art, $1.00 up per square foot.
Wire (for skylights), 35c per sq. foot.
Obscure glass, 26c square foot.

Note—Add extra for setting.

Heating—

Average, $1.90 per sq. ft. of radiation according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$30.00 per M
No. 2 common	24.00 per M
Selection O. P. common	35.00 per M
2x4 No. 3 farm lumber	18.00 per M
1x4 No. 2 flooring VG	47.00 per M
1x4 No. 3 flooring VG	40.00 per M
1x6 No. 2 flooring VG	42.00 per M
1¼x4 and 6, No. 2 flooring	50.00 per M

Slash grain—

1x4 No. 2 flooring	$37.00 per M
1x4 No. 3 flooring	33.00 per M
No. 1 common run T. & G.	28.00 per M
Lath	6 50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.00 per bdle.
Redwood, No 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.
1 1-16x2¼" T & G Maple	132.00 M ft.
⅞x3½ sq. edge Maple	140.00 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—

O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high per lineal ft., $6.50 each.

Dining room cases, $7.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.

For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	.29c per yard
Three-coat work	40c per yard
Cold Water Painting	10c per yard
Whitewashing	4c per yard

Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lbs. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Meduse finish, No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid, according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel; average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, Etc.—(See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestos Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	$9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.00
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	$7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.80
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

these important factors through coordinating industrial action should be the objective of every Chapter of the national association."

Charles H. Purcell, California state highway engineer, delivered an informative and intensely interesting illustrated lecture on the San Francisco-Oakland Bay Bridge.

W. Frank Persons, director of the U. S. Employment Service at Washington, flew out to the convention to outline the views of his department on "Construction Labor Supply and Regulations."

Governor Frank F. Merriam addressed the conclave on the importance and significance of California's new law to license contractors. The Governor spoke with warmth and appreciation of the high standard of ethics maintained within the construction industry and paid tribute to the accomplishments of its members who are contributing to the country's outstanding construction achievements.

Wm. G. Bonelli, director of professional and vocational standards of California, delivered one of the most pertinent talks of the session, dealing with the functions and powers of the California Contractors' License law. He stated that he believed that a standard of cooperation had been developed in California to the point where it is safe to invest a board with supervisorial jurisdiction. "For that reason," he said, "the new contractors' license law set up a board from the industry to regulate the industry." Mr. Bonelli pointed out that the new board will have some difficult but nevertheless, definite problems to face, among which would be the problem of establishment of some set of pre-requisites for licensing contractors.

Geo. B. McDougall, California State Architect, spoke about the building program of the state of California, and dwelt at some length on the problem of construction and rebuilding of the schools.

W. E. Reynolds, assistant director of procurement, U. S. Treasury Department at Washington, outlined the reorganization which has taken place in the Procurement Division of the Treasury Department and mentioned many of the problems they were meeting daily. He stated they planned to have three hundred and fifty-one jobs out to construction by March 1, 1936, and that at the present time Federal buildings were going out for bids at the rate of three and four a day. Mr. Reynolds said the Government favors the contract method on all Federal buildings.

The national highway program was discussed at length by Dr. L. I. Hewes, deputy chief engineer, U. S. Bureau of Public Roads.

The final public session was presided over by A. B. Ordway, president of the Northern California Chapter, AGC, and was devoted to the

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discussion of the Federal Housing Administration. The speakers included Fred W. Marlow, district director of FHA and David J. Witmer, western regional director, American Institute of Architects. Mr. Witmer delivered a thoughtfully prepared paper on the subject of cooperation between the architects and the building contractors.

ROYAL FLOOR COMPANY MOVES

Architects, contractors and individuals interested in the latest in floor coverings, are invited by the Royal Floor and Linoleum Co. to visit its new showrooms at 1930 Van Ness Avenue, San Francisco. Here are displayed, in the most effective manner, samples of the newest creations of leading manufacturers of linoleum and rubber tile floor coverings.

The result of months of planning, probably the most interesting features of the beautiful new Royal Floor headquarters are the unique display facilities for the showing of samples to architects and clients. The entire interior and store front was remodeled affording the utmost in facilities for efficient handling of floorcovering jobs, large or small.

Incidentally, there seems to be a trend toward Van Ness Avenue locations for firms in the building equipment and accessories field.

PREPARING FOR EXAMINATION

Seven architectural designers, William Bartholet, Frank M. Smith, Jr., Ted Carroll, Frank M. Edmands, Fred J. Rogers, Ed Dofsen and Earl Montgomery, are taking an intensive course of study in preparation for the license examination to be held in December by the Washington State Board of Examining Committee of Architects. The course is being given under the general direction of Harlan F. Thomas, director of the School of Architecture, U. of W., who is personally teaching the history of architecture.

George Gove of Heath, Gove and Bell, Tacoma, is handling the problems in design.

Jack Sproule is giving instruction in structural engineering under the supervision of Director Thomas.

The mechanical subjects are being given by a group of Seattle engineers.

PROVISIONAL CERTIFICATE

Eugene V. Ward of Stanford University has been granted a provisional certificate to practice architecture by the California State Board of Architectural Examiners, Northern District.

SHELL OIL STATIONS

The Shell Oil Company will build new service stations at Grass Valley and Redwood City. L. Raymond White, architect for the company, is preparing the plans.

ORIGIN OF NAMES OF CALIFORNIA COUNTIES

This is the second article in the series giving derivation of the names of California counties, the first appearing in September:

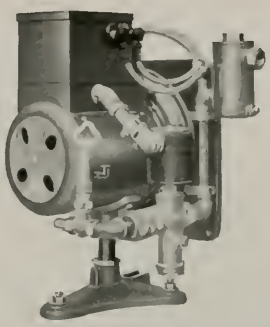
Colusa County — Created February 18, 1850. This is one of the twenty-seven original counties of California. The name of this county in the original act of 1850 was spelled "Colusi", and ofttimes in newspapers was spelled "Coluse". It was the name of an Indian tribe living on the west side of the Sacramento River. The exact meaning of the word "Colusa" never has been determined although the late Hon. John P. Irish, in a letter to Prentiss Maslin, offered a solution. He wrote:

"I note that you find no meaning or translation of the Indian word 'Colusa', the name of the tribe from which the county was named. The late General Will Green, who went there while the tribe still was a strong body and associated with them so much as to acquire a knowledge and quite free use of their language, told me that the word 'Colusa' means 'scratcher'. When a member of the tribe married, it was the privilege of the bride to begin the honeymoon by scratching her husband's face. The young women so uniformly availed themselves of this privilege that a newly married man always was known by the deep scratches upon his face inflicted by his wife. From this tribal custom the tribe was known as Colusa or the scratchers. General Green always was so correct in the knowledge he acquired and imparted as to such matters that I am very certain this is the exact and correct meaning of the word 'Colusa'."

For the last eighty years, Colusa county has made steady strides in stockraising, dairying, fruit and nut culture and general farming. Before gold was discovered in nearby counties, the section now known as Colusa was practically isolated, the census of 1850 reporting 115 residents. When a few of the other counties experienced an influx of fortune seekers, many saw possibilities in Colusa for growing wheat, barley and other grain products to feed the miners. This was the beginning of progress.

In Colusa are thousands of acres of rich valley soil, the depth of which is almost unbelievable. Wells have been drilled to 300 feet without striking bedrock, and experts agree that probably a soil depth of 1000 to 1500 feet could be shown. Approximately 225,000 acres are devoted to almonds, deciduous and citrus fruits, alfalfa, wheat, barley, corn, beans, rice and melons alone while 19,387 acres are rice fields and 11,000 acres are given over to almonds. It is estimated Colusa has 240,800 head of cattle, sheep and hogs. Population: 10,258. Area: 1140 square miles.

Contra Costa County—Created February 18,



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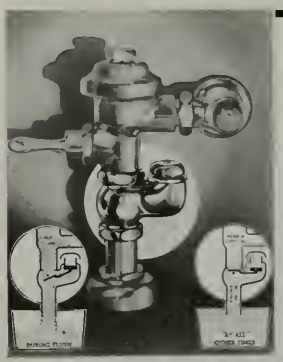

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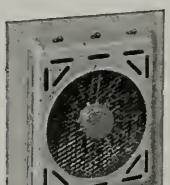

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1850. One of the original twenty-seven California counties. This county originally included what now is known as Alameda county, and because of its relationship to San Francisco county, on the west side of San Francisco bay, it was called in Spanish Contra Costa, or "opposite coast", lying as it does on the opposite coast or eastern shore of San Francisco bay.

Although one of California's smallest counties, Contra Costa combines farming, manufacturing and desirable living conditions to such a high state that the wealth per capita has ranked first among all counties in the United States for years. Statistics show a population density of 110.1 per square mile as compared with the state average of 36.5. The county raises over thirty farm products and has more than fifty factory products. One-eighth of the world's oil output passes through Contra Costa County, with four of the largest oil refineries in existence operating.

As the deep waters of San Francisco Bay, San Pablo Bay and Carquinez Straits provide accessibility for ships of all descriptions, Contra Costa is the only county in California boasting ten harbors of commerce.

Almost in the geographic center of the county, Mount Diablo towers to a height of 3900 feet, commanding a view of the territory embraced in at least thirty-five of California's fifty-eight counties.

Three of the greatest bridges in the nation enter Contra Costa from two neighboring counties, the Southern Pacific bridge across Suisun bay, the Carquinez bridge across Carquinez Straits, and the Antioch bridge across the San Joaquin river at Antioch. Population: 78,608. Area: 714 square miles.

(Next month: Del Norte, Fresno and Humboldt Counties)

HAS MUCH RESIDENCE WORK

Frederick L. Confer of Berkeley reports plans completed or on the boards for houses in Forest Lane, Berkeley, Happy Valley, Orinda and Vallejo, Solano County. They will cost from $5,000 to $9,000 each.

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THE TERMITE SURVEY

The preliminary phase of the San Francisco Termite Survey has ended, and an extensive program of building inspection inaugurated. The Federal Government has appropriated the sum of $444,540 from the WPA funds for the conduct of the survey, to which the City of San Francisco has made an additional appropriation of $33,000, making a total of $477,540 available for the completion of the local survey.

In the preliminary phases of this survey, special emphasis has been placed upon the education and training of men in proper methods of making inspections, and upon instructions in identifying different forms of wood-destroying organisms. There is now available a considerable number of men, many of whom are college graduates, who have completed the course of training and are now capable of undertaking the intensive work of building inspection. The survey will employ 433 men on full time for one year. It is estimated that there are approximately 100,000 buildings within the city limits of San Francisco. Detailed reports of inspections made are furnished property owners free of charge.

Inspection headquarters have been established in the fourteen assembly districts into which the city is divided. The work of inspection will be completed through these district offices, and the final reports transmitted to the survey headquarters at the Washington School, Mason and Washington Streets, where the statistical and scientific analysis of the reports will be accomplished.

W. R. Shaw, Ph.D., of the University of California Extension Division, will supervise the biological studies, and E. Ross Ellis, a recent graduate of the University of California College of Forestry, will assist in directing the inspections.

This survey is the first of its kind to be undertaken and will provide a very accurate analysis of conditions to be overcome in a constructive revision of the San Francisco Building Laws.

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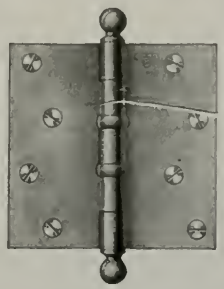

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STEEL SHOWS WAY

Indications of an upturn in the heavy industries, particularly privately financed building construction, are found in an analysis of steel production for the first half of 1935 just made by American Iron and Steel Institute.

During the second quarter of the year the output of steel for building purposes increased by 14 per cent over that for the first quarter, and it was the largest for any three-month period since the second quarter of 1934, when the total was swelled by public works construction.

A sharp spurt in buying of fences and steel for various uses on the farm occurred in the second quarter, and increasing purchases by many other industries, including railroads, were shown. The automobile industry, however, apparently retained its position as the largest single market for steel.

The increased demand in the second quarter for steel products used in building coincided with gains of nearly 100 per cent over the first quarter in residential building contracts, and of 25 per cent in non-residential contracts as reported by the F. W. Dodge Corporation. By contrast, public works contracts were down 10 per cent from the first quarter and 52 per cent below the average for the first two quarters of 1934.

Nearly 1,232,000 gross tons of the steel products which are largely used in construction such as structural shapes, steel plates and piling, concrete reinforcing bars, galvanized sheets, butt-welded pipe, nails and conduits were produced for sale by the steel industry in the second quarter of this year.

This tonnage is 14 per cent above the total of 1,079,000 gross tons of these products produced in the first quarter of the year and represents about 19.3 per cent of the total tonnage produced in the quarter. First quarter production of steel building materials amount-

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ed to only 16.2 per cent of total production.

Total production for sale of steel products in the second quarter was 6,411,213 gross tons, down four per cent from the first quarter total of 6,661,995 gross tons.

Steel consumption by the automobile industry in the second quarter as indicated by the production for sale of merchant and alloy bars, sheets, except galvanized, and strip steel of each of which the automobile and parts industry is by far the largest user, was about 425,000 gross tons, or 15.5 per cent below the first quarter.

Total tonnage of these products amounted to only 36.1 per cent of the total production in the second quarter, while first quarter tonnage of these products was 41.1 per cent.

Purchases of steel by farmers for fences, fence posts and bale ties in the second quarter were more than 30 per cent ahead of the quarter preceding, and 7.5 per cent above the second quarter of last year.

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surface, saturated with resin and baked under pressure.

The result is a laminated sheet of steel, terne alloy, felt, and resin - impregnated paper. The sheet has steel's strength, but it neither looks, nor feels, nor sounds like steel.

This new material has been suggested for furniture interiors of office buildings, store fronts, radio cabinets, and other applications where steel's strength and low cost are advantageous, but where the appearance of marble, various kinds of woods, or any colored finish is desired.

G.G. CAT-WALK

For the first time in history a complete crossing of San Francisco's harbor entrance, from anchorage to anchorage of the Golden Gate Bridge, has been effected and workers on the mighty span are walking dry-shod over what once was looked upon as an insurmountable water barrier.

All the catwalk, or foot bridge sections of the span are now in place.

Work has started on the telephone and electrical signal system to be used during the cable spinning operations. It is estimated by Chief Engineer Strauss that all this work will have been completed in less than a month's time, following which the actual spinning of the cables will commence.

On the Marin side all work, other than the cable spinning, has been temporarily completed and the steam shovel, used in excavating for the footings of the approach viaduct and the abutment, has been moved to the San Francisco anchorage site in readiness to start excavations on this side.

SUB-STATION

Following an $87,409 PWA grant, construction work on Alameda's new electric sub - station will get underway as soon as Federal funds are made available, William R. Paulson, general manager of the light plant, has announced.

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Ford Assembly Plants, Seattle, Long Beach and Richmond
Oakland Approach to Bay Bridge

Contracts Awarded
U. S. Mint, San Francisco
Administration Building and Toll Plaza, Bay Bridge, Oakland

•

Clinton Construction Co.
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The new sub-station, to be located on Buena Vista Avenue, between Grand and Everett Streets, will be constructed at an estimated cost of $195,422, with the Board of Public Utilities raising $108,013 of that amount.

Included in the project will be the construction of a new and centralized fire alarm system to replace the present one at the foot of Park Street.

ENGINEERS REPORT ON DAM SAFETY

Exhaustive studies and tests show there has been no downstream movement of the rock fill San Gabriel Dam No. 2, and that the structure is safe, according to a report submitted to the board of supervisors by C. H. Howell, chief engineer of the Los Angeles County Flood Control District. Suggestion is made, however, that consulting engineers be appointed to inspect the dam and report their conclusions at some time in the immediate future.

Mr. Howell quotes from a report by Paul Baumann, assistant engineer, who compiled the data relative to settlement of the rock fill and the tests made as follows:

"No downstream movement of the dam along the stream bed has occurred. Due to the methods of construction used, a large amount of vertical settlement was inevitable, but a large portion of this settlement has already taken place. Additional settlement will certainly occur, but it is impossible to predict its exact amount. The timber facing, designed to an additional settlement of some thirteen feet, should last throughout the settlement.

"It is proposed to load the dam and fill the reservoir in increments, holding the water surface at predetermined levels. By doing so, the settlement as described can be induced gradually. Several seasons may be required to effect final consolidation. The above method is the most practical way whereby Dam No. 2 can be brought into

(Turn to Page 80)

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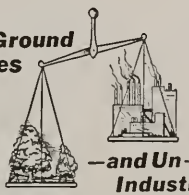

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The December issue of The Architect and Engineer is to be a special one. Its subject: The Modern Movement in Architecture.

It will be a representative summary of the best modern work of the coast. We are a little tempted to set beside it a few examples of the worst also.

For there is modernism. And there is psuedo-modernism.

One has its roots deep in profoundly-based convictions and principles, a new form-sense. The other is a meaningless imitative gesture.

The typographical makeup of the December issue will be designed by Pauline Schindler. And its advertising will constitute an illustrated portfolio of those factors which constitute the stuff of modern architecture.

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SAN GABRIEL DAM

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condition for full service.

"The dam has sufficient weight to support the full water pressure. This stability is greatly increased moreover by the interlocking and wedging of the dam section between the irregular shaped abutments. It is believed that the flattening of the downstream slope to 2 to 1 is advisable in order to provide additional security in case a severe earthquake occurs when the reservoir is full."

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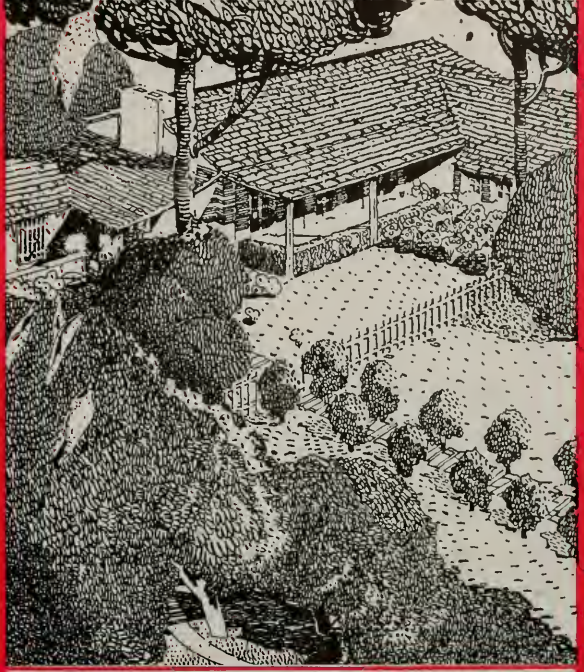
In view of expected changes in rental demands, today's dollar, with its relatively high buying power, represents a spending opportunity for owners of rentable buildings. Modernizing under skillful management kills two birds with one stone by raising a building to a plane equal to or above that of its neighbors and paying the cost in depreciated dollars of tomorrow. Recovery has started. It means price advances. As the buying power of the dollar declines, equities in real estate increase in dollar terms. When by modernization more cash is put into equities, whether borrowed or savings, the advance in their dollar value forms a sure hedge against the coming change. For example:—If a property is 90% mortgage and 10% equity, a rise of 25% in the general commodity level leaves the indebtedness the same but increases the equity 350%. At the same time, costs of modernization are rising in proportion and owners who do not modernize now will have to pay the higher prices later, thus losing much of the general price rise for their profit account. Further consideration is due to the fact that old maintenance items may be replaced in less costly manner.

NOVEMBER • NINETEEN THIRTY-FIVE



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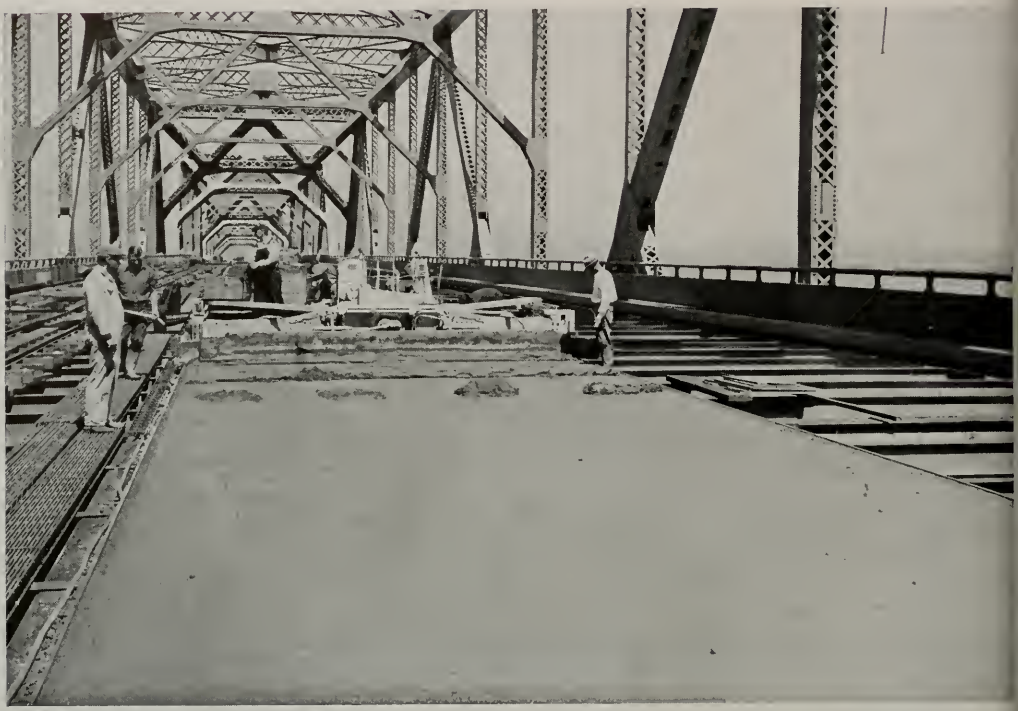

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Modern construction methods demand that materials be quickly available from dependable, adequate sources of supply.

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Produced on San Francisco Bay, it is always quickly available in bulk or sack ... by rail, steamship, barge or truck.

You'll also find the men behind Golden Gate right "on deck"... always ready to serve your needs.

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Early this year—A HOPE . . . .

Now—AN ACTUALITY

A return of sustained, healthy activity in Residence Construction. October was a Million Dollar Month in value of Northern California homes financed through the National Housing Act. Building permits in the Western States have averaged nearly $10,000,000 monthly during the first nine months of this year, an increase of almost 100% over the same period last year. There is every indication that 1936 will see an even greater increase. Release of funds for financing, lack of available rental properties, accompanied by an upswing in rents, urgent need for improvements and modernization, the return of general business prosperity . . . all are factors in the very definite trend toward what may well become a major boom in residence construction. Producers of building materials are appraising media for aggressive sales promotion during the coming year. Publications serving the building industry have shared in the "lean years" along with the producers. Some were not able to weather the storm and ceased publication. Others resorted to skipping numbers. Only those firmly entrenched with a definite editorial background and "reason for publication" have been able to "carry on" without omitting numbers or reducing publication standards. Such a journal is The Architect and Engineer, which has faithfully served its field for Thirty Years, without the loss of a single issue, and now, with "better times" in sight, pledges continuance of its constructive editorial policy . . . based on the knowledge that it is only by being of maximum interest and service to its readers that it may be of greatest value to the advertisers.

The
ARCHITECT
AND ENGINEER

San Francisco Los Angeles

Notes and Comments

FROM all accounts Los Angeles is feeling the effects of a real building revival. There is more unadulterated optimism in the Southern California city than for several years. Rosy, indeed, is the 1936 outlook. The building material manufacturers, already getting busy, are preparing for an increased output of their products by adding new equipment and building factory extensions.

It's in the air.

This confident feeling of better conditions is spreading to the North. San Francisco architects are reopening their down town offices. Draftsmen are getting back into harness. Real jobs are beginning to loom. The first of the year will witness awards of many big building contracts—a great number of them made possible by Federal allotments. Besides these government-aided jobs, there is promise of increased private speculation and investment. A condition we shall welcome. Right now architects tell us there are earnest inquiries from prospective builders of office buildings and apartment houses. Meanwhile manufacturers are wondering if they won't need more space to take care of more business which seems about ready to break.

* * *

AND while we are on the subject of a building revival, let's quote a paragraph or two from the October *Tide* under the caption "Boom".

"It will burst in the Spring of 1936 and skyrocket us all to prosperity.

"It will be that savior, or rebirth, or justification, or jab in the arm, so craved these last dark years.

"Bankers are making friendly appraisals. Brokers are recommending stocks. . . . Manufacturers are expanding.

"From brick makers to lace curtain manufacturers, business men the country over are watching sharp for the bandwagon, determined to get a good seat, For, say they, it's about to begin — the building boom of the late '30's.

"Here's how they reason it.

"That there's a shortage of houses has long been well known. Some say it's as high as 2,000,000. It's a big one all agree.

"Shortages, however, don't make booms. It's filling them that does."

* * *

THE growing importance of town planning is felt by many of the universities, as indicated in the second annual report of Dean Joseph Hudnut of the School of Architecture, Columbia University. Dean Hudnut calls attention to the importance of including, as an essential part of the curriculum in architecture, some sustained and organized experience in the science of town planning. With his approval of such a course the Dean says:

"The swift and undirected growth of great industrial cities, together with a more compassionate and responsible attitude toward human misery, have brought into being in our time that more comprehensive and realistic study of civic environment which deserves to be called a science. The conception of a city pattern which shall be neither evolved by the compression of a living organism into a geometric mold, nor yet the result of the blind and accidental operation of economic forces, has slowly taken-shape in the public mind. The political adjustments which will in part make possible the realization of such conceptions are in process of formation. A new principle — that of planning and building for the better life of the community as a whole—must soon gain the ascendency, and it is highly probable that the next hundred years will witness a vast replanning and rebuilding which will completely transform the outward aspects of our cities.

"The town planner, whose activities comprise a vast coordination among engineers, lawmakers, sociologists, and technicians of every kind, must be assured of the co-operative activity of architects, whose individual buildings must be harmonious and ordered elements in his organically conceived patterns. The conception of a city as a composition of related structures and open spaces—of buildings and the traffic ways which serve buildings—must overcome in the mind of the architect the conception of a city as a mere aggregation of highways whose frontages afford opportunities for the practice of his art.

"It should be one of the purposes of architectural education to give the architect an immediate sense of this responsibility to his community, and an understanding of the relation of this art to community life."

* * *

THE Editor has received from Robert B. Stacy-Judd an interesting reply to Professor Kramer's recent criticism of Mr. Stacy-Judd's series of articles in this magazine on "Maya Design", but lack of space compels postponement of publication for a month or two. Mr. Stacy-Judd, by the way, will shortly produce a new book on Mayan architecture —called "Mother of Empires", and to use his own words, it will be "decidedly revolutionary in thought"".

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The Architect & ENGINEER

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RESIDENCE FOR KUBEC GLASMON, COLD WATER CANYON, CALIFORNIA

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

The Architect & ENGINEER

November, 1935

Sane Design

● *Good Architecture Reflected in the Work of Henry Carlton Newton and Robert Dennis Murray*

There follows a few random thoughts on Architecture by Mr. Murray — thoughts which every architect will appreciate. The modernists may differ with him to some extent, but generally speaking, what Mr. Murray says the profession will understand as a frank interpretation of our present day—shall we say architectural progress?

TOO many people think of Architecture as some vague "arty" work dealing only with Greek temples, Egyptian tombs or Roman Basilicas. Architecture is of all the Arts, the one most constantly before our eyes. Nine-tenths of our lives are spent in or among buildings, yet how many of us get any real pleasure from good Architecture?

There has been too much of the "overstuffed" idea in small house design—trying to cram towers and battlements and this and that into one little home. There are so many examples of good houses in Southern California planned in a sane, sensible way that show rational and real progress and good taste, that it seems a shame to neglect the most important phase of American architecture and hurriedly throw together an unsightly muddle of lumpy plaster, red tile, plate glass "picture windows," and porte cocheres resembling hang-man's scaffoldings, all in one spot.

Architectural Labels

"California Provincial," "Outdoor Colonial," "Monterey," and every kind of "Rey" to houses with would-be Queen Anne fronts and Mary Ann rears, seem to be the rage now.

Why do they all have to have labels? Here in Southern California we are developing residential architecture which should not have to have a ponderous tag of any sort hung upon it.

Why do we strive to imitate styles unsuited to our climate and mode of living?

Editor's Note. The work of Newton and Murray is interesting from the standpoint of their handling of styles adapted to everyday use. A lavish copying of periods is not evident. The work of this firm shows originality and a refreshing absence of present day tendencies to indulge in "stunt" designing.

Our automobiles don't have to be Queen Anne or Julius Caesar. If some of our stylists had their way, we would be driving around in machines disguised as Roman chariots with the motor concealed under the ornamental dash.

Recently we were driving with a hard-boiled banker who had little time for our architectural attempts at "quaintness." As we passed by some wild looking Cuban Spanish atrocities the banker remarked: "Now we are leaving the Cubinola neighborhood and getting into the *Cute* Colonial." We continued through row upon row of quaintness, or rather architecture dripping with sentimental puedo - picturesqueness. Finally, in great disgust, he grunted, "If anyone lived in this atmosphere long enough they'd get this way themselves."

Yet we don't have to discard all our traditions either. Patios, porches, and balconies with a Mediterranean influence fit our conditions admirably. The so-called modern trend or modernistic, (call it what you will) seems to follow too much one formula. On a rocky slope its the same pipe-columns and overhanging masses of masonry as it is at the sea-shore or on a level city lot. It's as illogical as some of our attempts to out-Spanish-the-Spanish. And it is this matter of style that has a lot to do with most of our houses, particularly with the women. Why not a good logical modern American house? That doesn't mean it has to be devoid of romance and grace and pleasing proportions and even tradition. We have enough practical traditions without resorting to rusty village pump-heads protruding from Moorish-tile

RESIDENCE FOR KUBEC GLASMON, COLD WATER CANYON, CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects

DETAIL, RESIDENCE FOR JOHNSTON TODD,
PASADENA, CALIFORNIA

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

RESIDENCE FOR JOHNSTON TODD, PASADENA, CALIFORNIA
Henry Carlton Newton and
Robert Dennis Murray, Architects

table tops to give atmosphere (if not water).

No Need for Camoflage

We have developed new, pleasing and practical materials Why not use them in a logical way without trying to conceal them or make them look like something they are not. All of which reminds us of the dismayed old rancher who confidentially asked, "Say, what is all this 'Toile der Jouy' stuff my wife's been talking about anyway? If she thinks she's goin' to get me to sleep with dark blue wall paper the color of a 'jigilo's' shirt, with silver wreathes all over it, just to be stylish, then I'll pitch a tent outside."

One of the first requisites of a house is that it should be in harmony with the site and its conditions. Stock plans sold like bunches of bananas or loaves of bread, have never been very satisfactory (and often as capable of giving some people indigestion). Almost every house is an individual problem. By the time a stock plan is juggled around to fit special conditions it is apt to look like something a Florida tornado has left in its wake. And then who wants to live in plan number 999 anyway? Most of the pleasure in having a house is in planning it to fit one's personal needs, (certainly not just in paying for it.) If the day ever comes when all the people are billeted in stock houses assigned to them by the Government then along with Patrick Henry we say "Give us death."

A conglomerate mass of modern labor saving devices and efficient gadgets surrounded by walls, of course doesn't make architecture. However, there is no reason why we can not incorporate a reasonable number of modern contraptions in our houses to make living comfortable.

The All-Electric Kitchen

A kitchen is pretty much of a laboratory which should be easy to keep clean. Attractive colors and arrangement of fixtures can be accomplished with a little intelligent planning without having the room look like a starkly ugly operating room. Dust catching antiqued moldings and elaborately channeled woodwork, seem pretty silly. It would be well to consider all-electric kitchens (the bills that go with them notwithstanding) But if Madam Housewife has an inhibition about cooking with anything except gas then there are good gas ranges on the market and the Madam can gas herself all she wants. In other words, well arranged kitchens are preferable to picturesque kitchens. Monel metal, tile, enameled iron, rubber and wood, make good sink tops. There are compositions that may be satisfactorily used. Toe space under the

sinks, flush panel doors, good lighting and many other items, are essential. The processes in preparing meals and in serving them, and the number of steps that may be saved should be studied.

A bath room may be decorated as a formal boudoir even to carpet on the floor, or it may be simply handled in laboratory fashion with tile or phenol formaldehyde compositions, wall paper, sanitas or in various ways.

Glass Areas Overdone

Not to harp on modern monstrosities but there is a certain type of such house absolutely devoid of privacy where the rooms flow or leak or ooze into each other or out onto outdoor terraces, or outdoor living rooms, as they are sometimes called. All of which doesn't seem to be entirely practical, particularly when it is difficult to tell where the bath room leaves off and the breakfast room begins. We have lots of sunshine here in Southern California (we have perhaps over-done the mention of it). Why do we need tremendous glass areas which are heated on warm days by the sun's rays and again have to be heated from within on cold days. Think of your fuel bills (if you intend living in a glass house, you'd better not, for it might upset you). Not to throw stones, but all of this overdoing of glass exteriors is expensive. Thermos glass and double windows run into money. The window cleaning must be quite an item, too.

The question is often asked, "Do you think the modern adaption of the Monterey style or Colonial style will be good a few years from now or are they just fads? The answer is: Good logical architecture will always be good. From a purely artistic standpoint a correct composition is always good. Greek architecture of the ancients is still beautiful after thousands of years. The better Pompeian work is still good architecture. Our mode of living may change, while new appliances and conveniences are continually being invented which influence our mode of living regardless of style.

DETAIL, RESIDENCE FOR SIDNEY GLASS, FLINTRIDGE, CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects

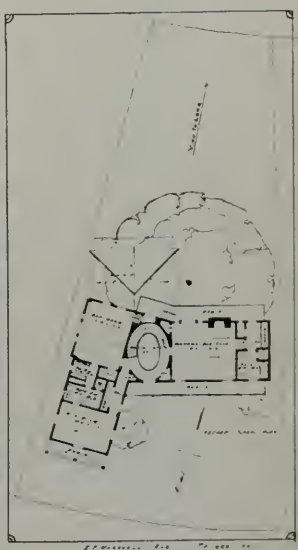
Greek classical architecture, Gothic architecture and all styles were modern architecture once. We cannot build a house and expect to have it absolutely up to date ten years from now, at least as far as equipment is concerned. But we can build a house that will have as much charm, or even more, when the planting has developed and the whole ensemble mellowed, ten years from now. The good styles of architecture are always a joy. They don't change like last year's hat or dress. A great deal of

ELEVATION AND LOGGIA, RESIDENCE FOR SIDNEY GLASS, FLINTRIDGE, CALIFORNIA

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

OUTDOOR LIVING ROOM, RESIDENCE FOR E. F. MARSHALL, TOLUCA LAKE, CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects

STREET VIEW, RESIDENCE FOR E. F. MARSHALL, TOLUCA LAKE, CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects



STAIR HALL, RESIDENCE FOR E. F. MARSHALL,
TOLUCA LAKE, CALIFORNIA
HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

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LIVING ROOM, RESIDENCE FOR CLARK DOWNEY, BRENTWOOD, CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects

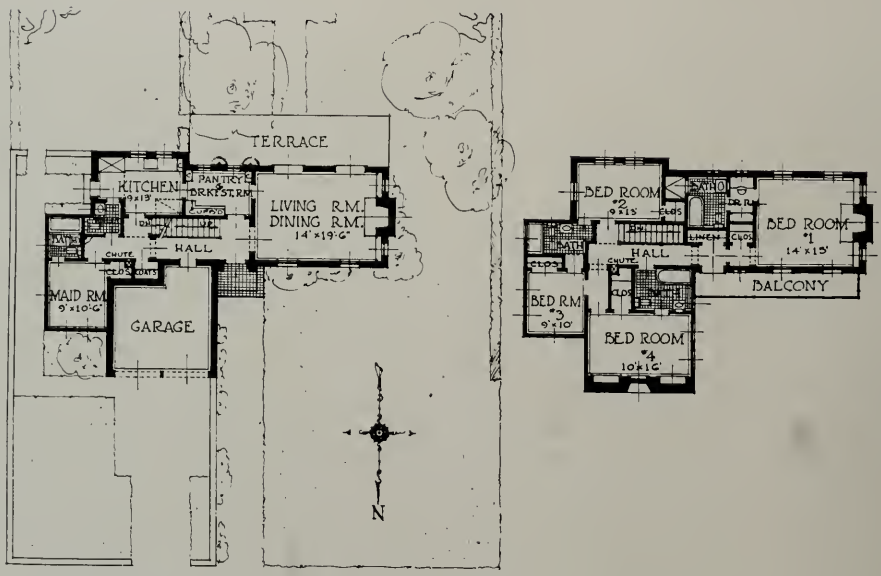
skill and knowledge are required to properly interpret these styles and fit them to our particular needs and conditions, be it a Colonial or a so-called modern house.

Some Modern Fads

Now we seem to be passing through a phase of Rumpus Room and Doll's-House Breakfast Rooms, which are doubtless harmless enough even if many of them are not useful. In larger houses a mania for billiard rooms once took the country by storm. After frenziedly using them for a few months they become stately morgue-like places with their shrouded tables.

Architecture is more than a matter of concocting something "cute or quaint." At the best it is hard to really do something of real architectural merit whether the house is small and informal or large and stately. There is much to be known about the principles of design, texture, color and most of all "restraint." That does not mean that a well designed house is not more interesting than one of these wildly cute things, de-

ENTRANCE DETAIL, RESIDENCE FOR CLARK DOWNEY, BRENTWOOD CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects



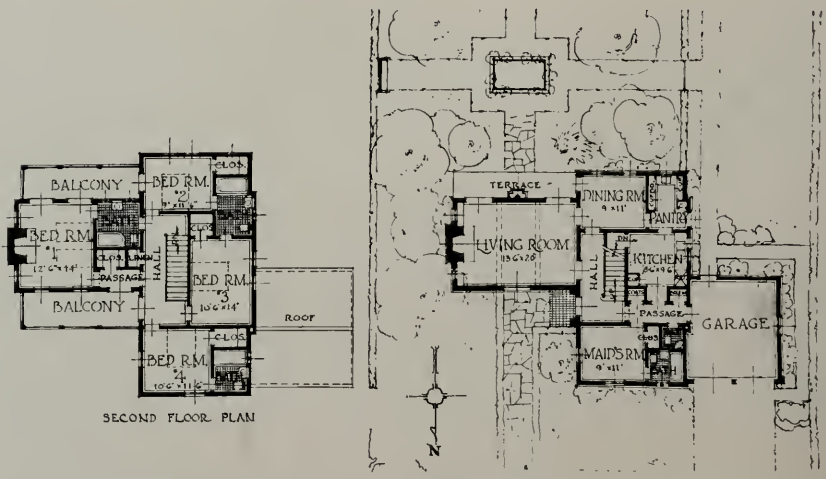
FIRST FLOOR PLAN

PRELIMINARY SKETCH, RESIDENCE FOR JAMES LYNN, BEVERLY HILLS, CALIFORNIA

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

RESIDENCE FOR JOHN WAGNER, LOS ANGELES
HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

signed sans knowledge of architectural principles, or the principles of scale, proportion, unity and the many other laws (we might call them) which are applicable to modern or traditional houses or any kind of a building.



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RESIDENCE FOR JAMES LYNN, BEVERLY HILLS, CALIFORNIA
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LIVING ROOM, RESIDENCE FOR CHESTER WURSTER, LOS ANGELES

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

STAIR HALL, RESIDENCE FOR CHESTER WURSTER, LOS ANGELES
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MUSIC STUDIO FOR STANLEY WILLIAMS, LOS ANGELES
Henry Carlton Newton and Robert Dennis Murray, Architects

DETAIL OF ENTRANCE,
MUSIC STUDIO FOR
STANLEY WILLIAMS,
LOS ANGELES

Henry Carlton Newton and
Robert Dennis Murray,
Architects

RESIDENCE OF WILLIAM A. JOHNSON, SAN MARINO, CALIFORNIA
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MOTOR COURT, RESIDENCE FOR HARRY G. JOHANSING, FLINTRIDGE, CALIFORNIA
Henry Carlton Newton and Robert Dennis Murray, Architects

PATIO, RECTORY FOR PARISH OF ST. PAUL THE APOSTLE, WESTWOOD, CALIFORNIA

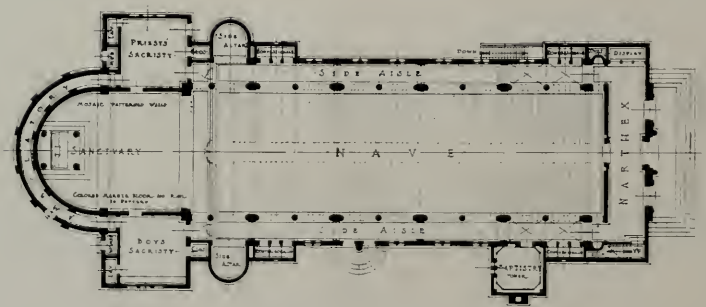
HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

CHURCH AND RECTORY, PARISH OF ST. PAUL THE APOSTLE, WESTWOOD, CALIFORNIA

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

MAIN ENTRANCE, CHURCH OF ST. PETER AND ST. PAUL, WILMINGTON, CALIFORNIA

Henry Carlton Newton and Robert Dennis Murray, Architects



PLAN, CHURCH OF ST. PETER AND ST. PAUL, WILMINGTON, CALIFORNIA

Henry Carlton Newton and Robert Dennis Murray, Architects

MAIN ALTAR, CHURCH OF ST. PETER AND ST. PAUL, WILMINGTON, CALIFORNIA

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LANKERSHIM ELEMENTARY SCHOOL, LOS ANGELES COUNTY

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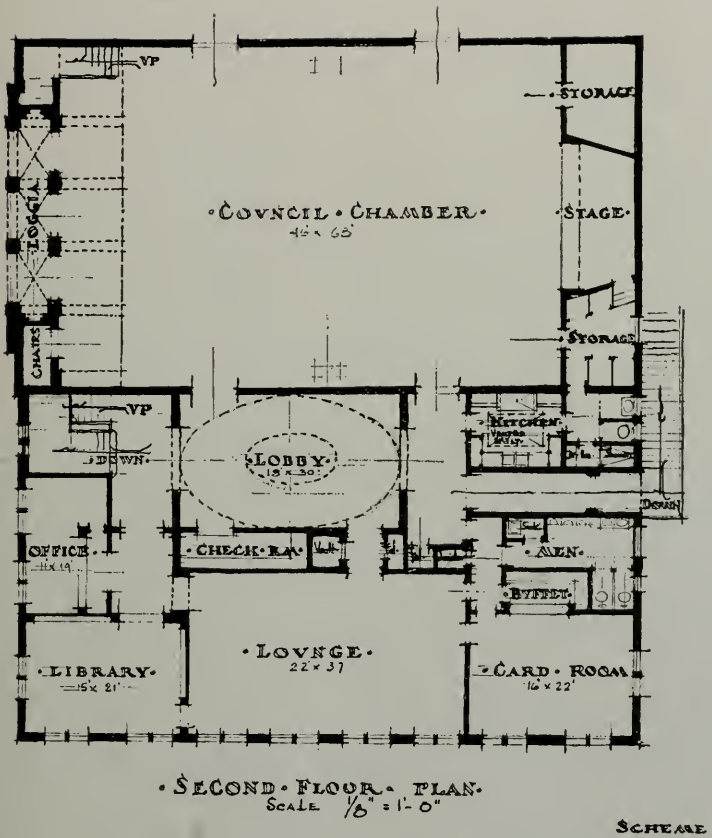
ELEVATION, CLUB BUILDING FOR KNIGHTS OF COLUMBUS, LOS ANGELES

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS



PLAN, CLUB BUILDING FOR KNIGHTS OF COLUMBUS, LOS ANGELES

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DETAIL OF MAIN ALTAR, CHURCH OF OUR LADY OF PERPETUAL HELP, DOWNEY, CALIFORNIA

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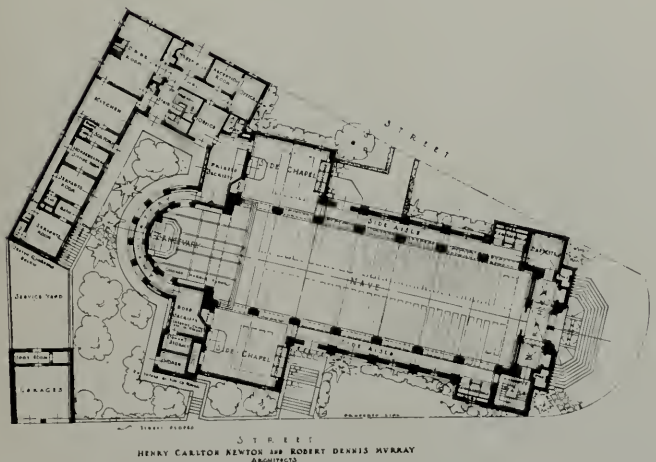
CHURCH OF THE PRECIOUS BLOOD, LOS ANGELES
Henry Carlton Newton and Robert Dennis Murray, Architects



PLAN, CHURCH OF THE PRECIOUS BLOOD, LOS ANGELES
Henry Carlton Newton and Robert Dennis Murray, Architects

DETAIL OF ENTRANCE, CHURCH OF ST. ANTHONY, GARDENA, CALIFORNIA

HENRY CARLTON NEWTON AND ROBERT DENNIS MURRAY, ARCHITECTS

W-P-A

What Price America

by Burt L. Knowles

● *Administration Criticized for Advocating Day Labor in Place of Contract-Force on Large Federal Projects*

ONE of the problems which seems to be causing the Washington Administration extraordinary concern is that of devising the means and agencies through which almost five billion dollars shall be spent for public works. That the expenditure of this huge sum is a task of gargantuan proportions no one will deny; and yet, it should not prove to be a particularly perplexing problem if the Administration will only follow the rules of the game—the rules and regulations which it laid down for itself when the program was devised in the first place. We will discuss those rules in just a minute.

I am not going to talk on this subject concerning its aspects as an industrial problem. The ravishing of the general contractors' industry is not exactly a mere incident in the economic life of this country. The emasculation of an industry that is the largest employer in the land can hardly be classed as a minor operation. To render impotent a business that is normally the second largest in the United States, a business that returns to the pockets of the workers a larger proportion of the dollars they receive than any other major industry, is in the normal course of events, an issue worthy of a more than casual observance and study. That the construction industry is being thus ravished by the Administration is a fact beyond dispute, and the effects of the government's program are daily becoming more and more alarming.

The problem of spending this five billion dollar fund certainly is not to be considered by the Administration as a political problem. The disposition of this money should not be influenced in any way by political partisanship or expediency. Those in charge of the administration of this immense fund have a duty and a responsibility to the men and women of this country who are supplying it, and there is one thing

Excerpts of an address at the eighth annual meeting of the California State Association of Architects at Santa Barbara, September 5, 1935.

that this huge fund of nearly five billion dollars absolutely must not be—it must not be a *campaign fund!* And the Administration should realize that it must avoid in the allocation of the funds and in the manner in which public works are performed even the "appearance of evil".

A Social Problem

The "brain - truster" will tell you that this is a social problem. The taxpayer says that it is not only a social problem, but it is an economic problem as well, and if the economic factors which form the basis of the Act which established this fund are ignored in its administration, the taxpayer is becoming increasingly aware of the fact that his tax dollars are being squandered and he is beginning to ask embarrassing questions.

Of course, this is both a social and an economic problem, but we can demonstrate beyond peradventure that if the Administration will but follow the rules laid down for it, every good social purpose for which the fund was created will be fully served and the money will be spent with the greatest possible economy.

Now, let us consider for a moment these rules to which I have referred — The bill provides for the performance of construction work of useful, permanent character. In other words, for the production of construction which is to some extent, at least, self-liquidating. The taxpayer has a right to expect tangible, permanent, assessible valuation. In other words, he has a right to expect something for his money. That is one of the provisions of the bill which created this fund.

There is another important rule which the law lays down for the administration of this fund—a rule which provides that in the expenditure of this money the facilities of private industry are to be utilized to the greatest possible extent. That rule was not in the bill as it was originally framed, but was added as an amendment thereto—an amendment which was offered and sponsored by the Associated General Contractors of America, and we are proud of it! We know from years of experience and from thorough investigation that only through the awarding of construction contracts under a competitive system to qualified experienced contractors can satisfactory results be obtained.

Another modification of the law which established this fund was made by Congress. This consisted in the ear-marking of funds for specific departments and for specific classes of operation.

Still another rule has been laid down, purporting to govern the expenditure of the Emergency Relief Fund. This rule is an executive order of no less a person than the President of the United States himself, wherein he declared that works costing in excess of $25,000, should be performed under the direction of PWA — presided over by Mr. Ickes; and that projects estimated to cost $25,000, or less, might be handled by the WPA—presided over by Mr. Harry Hopkins.

We have still another assurance from the President as to the way and manner in which he proposed to spend this money for construction. He has stated that it is his intention to utilize the facilities of the building industry to the full.

The Administration's Policies

Now, I propose to cite a few instances of what has happened and what is to be expected if the Government pursues the policies which it seems to have adopted. The evidence I am about to offer is not hearsay testimony—it is the result of my own observations.

As I was about to leave Topeka, Kansas, on my way west I was informed that it was very doubtful if I would be able to

get to Denver as a dam in eastern Colorado had failed, washing out railroad tracks and wrecking the town of Holly, Colorado. A great deal of damage had been done and serious loss of life had been averted only through the heroism of the telephone operator and his wife who had warned the people of the impending disaster. Feeling that this was something that might prove interesting, and at the risk of being seriously delayed, I took the train and proceed to the point where the tracks had been washed out and made an investigation. I found that this dam which had failed under its first test—a test for which it had been specifically built—namely, the protection of the town of Holly and contiguous districts from inundation, was the product of the "brain-trusters" first born child — CWA, and that it had been completed by FERA, the unworthy successor to CWA. I learned that its cost, according to those best qualified to judge, was about twice what it would have been had it been constructed by experienced contractors. It seems that the dam was so poorly constructed that competent engineers pronounced it unfit even to retain a small quiet lake to be used as a swimming pool and recreation center by the community. Now, where is the responsibility for the poor construction of that dam to be placed? Had this dam been built by men who knew their business, experts in construction, capable of designing and building structures of a permanent and useful character, it would not have failed, but if it had, the Government would have known where to place the responsibility. However, it was built under the direction of two administrations presided over by Mr. Harry Hopkins. Upon whom should the responsibility for this disaster, rest, if not upon those who advocate and permit the employment of such work by "pants" pressers, button-hole makers and leaf-rakers, and without the direction of competent contractors, with a direct pocketbook interest in the successful completion of their contracts.

Another Example of Folly

Permit me to cite another example—I desired to see one of the CCC camps that had been built by the day-labor method at the instance of WPA. I had the plans and specifications for one of these projects and I visited the camp with those plans and specifications in my hand, inspecting it from one end to the other. I found a project that was not built by any means in accordance with the plans and specifications upon which general contractors had based their estimates. The low bid on that particular job was about $20,000. I was informed that its cost to the Government was about $23,000, and the Construction Quartermaster in charge of the operations informed me, when asked as to the details of his cost accounting on the project, that his manner of keeping his costs had been prescribed for him. He had not included one cent for engineering expenses, for supervision, for equipment use or depreciation, for overhead, or for compensation insurance. All of these items, of course, were included in the contractors' estimates, together with a profit to which he would be legitimately entitled. Furthermore, the contractor has to pay taxes on his property, and he hopes some time to be able to pay income taxes again! Having a reasonable amount for the actually reported cost of this project, what then becomes of the reported cost of $23,000? Every one of these items of expense are an actual cost to the Government in its day labor operations with the single exception of profit. In one instance which I discovered twelve CCC camps were bid upon the same day by contractors and upon learning what the bids were, this youngest child of the "brain trusters" WPA said—'The jobs will cost too much

if built by contract—so we will do them ourselves—and they did!"

Our Government seems to be thoroughly blind to the fact that to invite bids from contractors involves considerable expense on their part merely for the bidding. Again, and more often than not, when the Government undertakes a day labor operation it does not follow the plans and specifications laid down for a contractor to bid upon. In this particular CCC camp which I inspected there wasn't a door frame on the project, except in the outside doors. Interior doors were hung to the studding. There wasn't a window casing in the camp. Both door frames and window casings were clearly shown on the plans and required by the specifications. And then these government officials have the effrontery to tell the taxpayer that the Government and its agencies can perform construction work cheaper than the contractors!

Day Labor vs. Contract

I visited an Army post in one of our western states, and upon arriving found the construction quartermaster in the deepest gloom. He said there had been allocated to this post several months before a little less than $1,000,000 for permanent improvements. He immediately prepared plans and specifications in anticipation of taking contractors' bids, as he was informed that the work was to be done under PWA regulations. He had been ready to take bids for nearly three months during which time, however, he was prevented from doing so on account of the disagreement in Washington as to how the work should be managed—whether by PWA, as he had been instructed previously, or by WPA, under the direction of Mr. Hopkins. The latter had prevailed and he was obliged to do the work on a day labor basis despite the fact, as he himself stated, it was work which could be done economically only by contractors on a competitive basis. The improvements consisted of the following: about 8 miles of concrete paved roads, 6 miles of concrete sidewalks with incidental gutters, culverts, drains, etc.; a complete storm and sewer system, natural gas installation with heating and cooking in all the buildings, with necessary trenches, piping and equipment; complete modernization of all the buildings with new plumbing and new electrical wiring. This construction quartermaster said to me:

"Can you imagine my despair when I tell you that I have been allowed the sum of $990.00 per man year for this project Do they think that plumbing fixtures grow on the sage brush out here!"

Any man familiar with construction knows full well that work of this character cannot be performed even under the most favorable conditions for less than between two and three times this sum, and yet this work has been taken over by Mr. Hopkins' WPA!

You will be interested perhaps to know that for every ten men working on this project, one only can be a skilled worker. The rest of them are unskilled. It is of peculiar significance that one of the regulations on this work requires that if a workman reports for work, even though he may not be able to do a stroke of work on account of weather, or for other reasons, he is to receive a full day's pay. This quartermaster informed me that he was permitted only two percent of his labor costs for his supervisory force and that he could only recommend the personnel which had to be referred to the local political committee and approved by Washington.

Please let me quote the words of another prominent public man—I refer to Harold Ickes, Secretary of the Interior, and Public Works Administrator. Heavens knows he holds no brief for the contractors as industrialists. His words on this point, however,

[Please turn to Page 58]

Portfolio

of Views of the Moderne Home of Mr. and Mrs. Cedric Gibbons (Dolores del Rio) Santa Monica, California.

STAIR DETAIL, RESIDENCE OF MR. AND MRS. CEDRIC GIBBONS, SANTA MONICA, CALIFORNIA
Douglas Honnold, Architect

EXTERIOR VIEW OF OBSERVATION WING, OVERLOOKING TENNIS COURTS, RESIDENCE OF MR. AND MRS. CEDRIC GIBBONS, SANTA MONICA

DOUGLAS HONNOLD, ARCHITECT

STREET VIEW OF RESIDENCE OF MR. AND MRS. CEDRIC GIBBONS, SANTA MONICA, CALIFORNIA

DOUGLAS HONNOLD, ARCHITECT

DRESSING ROOM AND PLUNGE, RESIDENCE OF
MR. AND MRS. CEDRIC GIBBONS, SANTA MONICA, CALIFORNIA
DOUGLAS HONNOLD, ARCHITECT

LIVING ROOM, RESIDENCE OF MR. AND MRS. CEDRIC GIBBONS, SANTA MONICA, CALIFORNIA

DOUGLAS HONNOLD, ARCHITECT

YERBA BUENA ISLAND TUNNEL of San-Francisco-Oakland Bay Bridge project as it will appear when completed. Illustrations Courtesy California Highways and Public Works.

DOWN TO THE CORE. With the tunnel completely concreted and steel lined by novel construction methods, a steam shovel begins removel of thousands of cubic yards of rock from 58 by 76-foot bore. Article on Page 58.

The Law

by Anthony J. Kennedy

● *Position of the Structural Engineer with Respect to Present Day Legislation*

IN the March issue of the Atlantic Monthly for this year one of the articles by an English scholar comments upon the illogical processes of our speech. As one of his illustrations he used the word "engineer." In England this title is reserved for those who engage and follow the profession of engineering—designers or constructors. In the United States, on the other hand, the same designation may indicate the vocation of a janitor who attends boilers, an operator of a steam shovel, or the driver of a locomotive.

An entirely separate article in the same magazine further illustrated the indiscriminate use of the word "engineer" to designate occupational pursuits. This particular article was a treatise on the physiology of fishes in explanation of a phenomena of submerged floating. I cite the article, by Chas. B. Stewart, not for its scientific content but for its concluding remarks:

> "A bird cannot long withstand hunger, therefore, a bird whose food supply is not of a kind to be had constantly, or on the wing, is provided with a crop, which is equivalent to a workman's dinner pail or the tank on a locomotive. This is a very admirable arrangement; but to take it up here would be to go into a quite different department of *animal engineering.*"

Since that time I have patiently waited to learn of another article in which the writer would expound the principles of the science of "animal engineering."

This to me, and I suppose to you, was an entirely new and distinct branch of engineering science.

These two examples quite vividly recall an incident of the last legislative session. One of the followers of the last Legislature was a rousing Epic. He was an individual desiring radical legislative amendments. He classified himself as an "engineer." His purpose in Sacramento was to have the Legislature adopt a program which would constitute an economic revolution. I once asked him in what line of "engineering" he was engaged. His serious answer was: "I am up here representing the people. I am a social engineer."

With these examples in mind, if the bill of 1931, restricting the use of the title "structural engineer" to those civil engineers who had passed a qualifying examination, served no purpose other than to preserve the title for the professional man engaged in the design and construction of

EDITOR'S NOTE—An address delivered at the convention of the Structural Engineers Association of California at Fresno, October 19, 1935.

buildings, it at least has the benefit that it differentiates that group from the steam shovel operator, the physiologist, and sociologist.

In tribute to those members of your group, however, who had the foresight to appraise the advantages that would flow from the enactment of legislation placing the "structural engineers" in a group apart, let me say that the accuracy of designation was not the only benefit. The legislation providing for restrictions on the use of the title "structural engineer" was passed in 1931. During the very next session of the Legislature, in the year 1933, one of the major catastrophies of the state occurred. This was the earthquake in the Los Angeles area. The great lesson learned from the calamity was that the school buildings of the state were structurally so unsafe that they constituted an ever present hazard and a death trap to the school children and teachers required to use them. Fortunately, nature had timed her shock so that the buildings were unoccupied and the awful consequences of wholesale slaughter was through the whim of nature averted. Chilling realization of the horrible disaster which might have been wrought, resulted in an imperative demand that the conditions shown to exist by the earthquake of 1933 should be forthwith remedied so that in the future the schools of the state would be sound in engineering design and construction and structurally safe. The Legislature appreciated the full import of the problem and immediately set into operation the wheels of legislative machinery to provide the protection theretofore lacking.

The problem of the Legislature was to have on the statute books a measure to assure that school buildings would be properly designed and constructed and the work done by competent men. Lo and behold, the class of men specialized in such work stood separated as a group apart from other professional men. In 1931 the classification of "structural engineer" had been approved by the Legislature and the Legislature immediately used the classification it had approved to require that for school buildings constructed in the future the plans should be drawn and signed by either an architect or a structural engineer. With slight reflection on your part you can reach your own conclusion as to whom the Legislature would have designated to perform these acts if the title "structural engineer" had not been approved by the 1931 Legislature.

This leads to the conclusion that there are reciprocal advantages to the public and to the engineers or other professional men in accurate and special legislation. In a day and age when so many of the functions of business and commercial and professional dealings are matters of legislative scrutiny and the subject of legislative enactment, both business and the professions should maintain an interest in affairs that ultimately affect their standard of ethics and their livelihood. The civil engineer and the structural engineer have a vital interest in present day legislative policy. The code of ethics of this group has been tremendously affected by the provisions of laws relating to structural engineers. The restriction of the use of the title adds to the prestige of the holder of the title and classifies him as a professional man of scientific attainments. This restriction allows the structural engineers to establish and enforce a rigid code of ethics raising the standards of this specialized group and such a code of ethics is indispensable to a profession that renders high public service. And the public interest has been served! The structural engineers being a close cohesive unit at the time the Field enactment was entrusted to their care were able to coordinate their efforts, to formulate rules and principles of scientific building construction that in many in-

stances worked a complete revision of former theories of building practice in the interest of safe construction.

The structural engineer has obtained a status and with the work of accomplishment completed it is to be remembered that it is the duty of the group and of the individual in the group to preserve and protect for their own and the public's benefit the legislation entrusted to them and the administration of which is placed in their hands.

Again the Field Act may be used as an example. It is agreed by anyone who has investigated the subject that it has been of incalculable benefit to the people of this state. It will take many years and perhaps another major catastrophe to fully emphasize the wisdom of this legislation. The burden of the responsibility for the protection of that statute is mainly and almost exclusively with the structural engineers of this state. As you have been advised, that measure was a subject of severe attack at the last session of the Legislature. Criticisms were made against it upon a dollar and cents viewpoint and expressions of dissatisfaction in some quarters were so vigorous that a repeal of the statute was threatened. This antagonism reached its fullest expression in the passage of the resolution authorizing an investigating committee to investigate the operation of the Field Act. That investigating committee has already been appointed. It has not as yet held any meetings. Shortly, however, it will start to assemble data upon the effect of the acts, its benefits and disadvantages, so that it will be able to render to the next Legislature a concise report with recommendations for continuance or repeal of the legislation or amendments affecting it. This committee will have to be guided in its deliberations. And in its function to ascertain the facts relative to the operation of the act no group is in a better position to inform and advise the committee than the structural engineering association. They know the conditions which gave rise to the statute; they know the problems that has been confronted in giving the statute effect; they know the benefits that have been rendered by the operation of the statute; they are in a position to judge as to the method of the administration of the statute by the state departments; they should be in a position to estimate its cost in terms of value, in dollars and cents, and in the human value of life and property. The structural engineers acquired a specialized practice from the Field Act through legislation enacted. Their interest in that legislation cannot cease. What course the investigation will take resides with them and it is their duty to the public and to themselves to see that proper data is presented to enable the committee to make legitimate recommendations. Public duty, your own private successes in your profession means that each one of you must quicken your ear towards the legislature and make it a truly representative body to you by having it reflect your interest.

LILY POND IN PRIVATE ESTATE

"THE GARDENER"
WOOD RELIEF BY
JACQUES SCHNIER,

Exhibited at
San Francisco Museum
of Art.

Termites

by John G. Kreer

● *A Discussion of the Use of Arsenic Compounds as a Wood Preservative*

THE termites and their works have been publicized to such an extent that architects generally are now aware of the menace they provide and are seeking the best ways and means to safeguard against them in designing new structures.

Many individuals engaged in the art of wood preservation have foresen that it would be necessary to take some steps to chemically treat lumber used in the building of homes and other types of structures. They have been earnestly at work during the past decade or two, developing the impregnation of wood so as to provide a material that would preserve all the high qualities naturally inherent in lumber as an element of construction, yet effectively remove the hazard of attack by fungi or termites, in order to provide in wood a satisfactory element of permanent construction. The most important progress has been made in the development of methods providing permanent fixation in the wood of water-borne toxic salts. The earlier conception of chemical treatment sought a single ingredient that would remain the same in the wood as in the treating solution or the original dry salt from which the solutions were prepared. There was a generally believed doctrine that only quite soluble materials could be toxic. As long ago as 1912 Wehmer published in Chemische Zeitung, Page 1106, the suggestion that highly toxic effects might be found in chemicals relatively insoluble in water provided they were soluble in the secretions delivered by fungi to break down or dissolve cellulose so that it could be assimilated by them for food supply. Elfving, in 1918, further developed this idea in a Swedish publication "Tinska Velensk" Soc. Forhandl, Volume 61, Efd. A., No. 15. With this guiding principle established, a great many practical investigators have experimented with chemicals that, when dried out of water solution, in contact with wood fibres, would deposit such relatively insoluble compounds on the fibres that leaching of the preservative would be effectively prevented, but, on the other hand, would be soluble in the secretions within or deposited outside of organisms capable of breaking down cellulose such as the fungi, certain types of bacteria, and the single celled organisms used by the termite in his intestinal tract to pre-digest his food. Such toxins intimately bound into the fibres of wood and put into solution by the same secretions that broke down the cellulose

into soluble form would then be absorbed along with the food supply. As this principle was developed, many earlier observations took on new importance and the efficacy of certain chemical combinations for which there had seemed to be no very clear explanation, found justification in a partial fixation that had unwittingly been attained.

Dr. Karl H. Wolman, many years ago, announced the principle that the variation in specific toxicity of any one chemical to different fungi was so great as to preclude the likelihood that a single chemical compound could be depended upon for effective wood preservation. Each individual chemical of the very large number that he investigated might prove highly toxic to most of fungi, but always there seems to be some one species that proves to be an exception and are not destroyed by even relatively large quantities. This led to the theory that a successful preservative to be really dependable under all sorts of conditions must be a complex of a number of different chemicals carefully selected to reenforce each other in toxic effect and of sufficient variety to provide against all known classifications of fungal resistivity. Among the chemicals, so chosen by Dr. Wolman, were certain salts of chromium, which besides their toxic value, presented certain worth-while physical and chemical characteristics, including passivation of the treating solution and of the impregnated material against oxidation or rusting of contacting metals.

Thirty years ago, these mixtures came into use and have been employed in nearly every country of the world, with a successful record of accomplishment in protection against decay and termite attack. About ten years ago, intensified study of fibre fixation for preservative chemicals led to the discovery of the true principle of fixation of a group of chemicals by salts of chromium. A suspicion of the existence of some such action had been expressed as far back as 1912, but it was not until some ten years ago that the work of Dr. Wolman, in collaboration with Dr. Hans Pflug, definitely established this functioning of chrome salts and the correct proportioning to accomplish the desired purpose advantageously. Making use of water-soluble salts of fluorine, of arsenic, of chrome and of certain organics like nitrated phenol, treating solutions are formed which, as they concentrate during the drying period in intimate contact with wood fibre, are precipitated no longer as freely water-soluble substances but as very difficultly soluble, or nearly insoluble chemical compounds, tightly bound into the wood fibres.

The discovery of a chemical complex that would so dry out of the evaporating solution and yet retain its full toxic value, has proved to be a most important step in the art of wood preservation and makes available to architects and engineers a treated wood thoroughly safeguarded against premature destruction, while it does not impart any objectionable characteristics at all to interfere with the use of such wolmanized lumber in building construction.

It may be of general interest to the readers of THE ARCHITECT AND ENGINEER to consider the components of this modern wood preservative. A wood preservative, of course, may be modern in spite of thirty years of service back of it. It does not begin to count as a wood preservative at all until a decade or more of successful service establishes its first claims to recognition. While exactly the same ingredients are used, the modified proportioning of these ingredients that has brought about high fixation of the chemicals within the treated wood marks a forward step of such importance as to justify the term "modern".

The toxic value of fluorides has long

been known. A large percentage of the roach powders in common use everywhere consist wholly, or in large part, of fluoride. Since termites belong to the roach family, being a collateral branch that separated off perhaps one hundred million years ago, it is quite understandable that the fluorides will prove destructive to them as they do to the roaches. On the other hand, fluoride solutions have been used as a preservative dip for meats. This service became quite extensive in the movement of beef from South American points to Europe prior to the development of refrigeration chambers on shipboard. While in the United States it has not been looked on favorably for treatment of foodstuffs, it is apparent that in the low concentrations in which it would be present, fluoride would not be poisonous to man.

Arsenic is so widely distributed in nature that it would be very difficult to secure absolutely arsenic-free food supplies. In small dosage it has been employed in the treatment of malaria and other diseases. It is extensively used for spraying in orchards. Arsenic, in concentrated form, is an active poison, and when presented in such shape as to be assimilable in the blood, is not readily eliminated so that a certain cumulative effect develops. It is, of course, evident that to be effective in wood preservation any chemical must be toxic. Nevertheless, it is quite possible to have such toxic chemicals so deposited within wood that the resulting product is entirely safe for all contacts by human beings or domestic animals. The original powerful toxic effect must be retained, but released only when the preservative and the wood fibres together are dissolved by the special digestive secretions of the attacking wood destroyers. And that is just what is accomplished with suitable chrome salts and arsenic salts, drying out in contact with wood fibres. *"The resulting difficulty soluble chrome arsenate is so securely fixed that leaching or exudation no longer can occur".*

About one hundred years ago, in an effort to obtain commercial advantage over a competitor, a theory of arsenic poisoning by arsene gas formed from arsenic treated wall-paper was first promulgated. Based on half truths and guesswork, it ran its course in a political atmosphere where scientific facts were discounted or distorted. A vast amount of publicity was secured and seeds of distrust of arsenic in any form were broadcast to such an extent that the use of arsenic pigments in wall-paper was very nearly discontinued. Even today, with ample knowledge of the real facts readily available, the Gosio gas, or arsene gas scare is periodically invoked when it seems possible to make use of it to frighten the public away from some competing product that employs arsenic. Now it happens that arsenic, in properly safeguarded form, has been found to be the best material for protection against termites—almost a specific poison to them. It may therefore, be of interest to briefly cite some pertinent references on this subject:

Article by Dr. Walther Hausmann published in the Z.f. Hyg. u. Infek. 1906, 53-509, gives the results of his experiments as to possible poisonous effects of these gases. Hausmann exposed white mice in chambers containing strong concentrations of the gas. After two months, no ill effects could be observed in the mice, but rather the reference: "They became stronger and livelier".

In Sweden in the year 1913, Harold Huss carried on experiments, the report of which is given in a 43-page article in the Z.f. Hyg. u. Infek, 1913, 76-361. Huss tried fifty different species of molds, ten

different genera, and three of the more important wood-rotting fungi on arsenic culture media. He reports confirmation of previously published findings, that only a very few molds, of which penicillium brevicaule is one, have any power of evolving these arsenic gases and that they are always very much more frail and perishable than other types of molds. He found none of the wood-rotting fungi that were studied capable of evolving such gas, and after various tests and experiments comes to the conclusion: These arsenial gases evolved by fungi possess only a negligibly poisonous quality.

Another rather exhaustive report of experiments made by Germund Wirgin in collaboration with Ivar Lagerberg is included in the official reports of a Swedish Commission for the study of this subject, in which tests of the possibly poisonous quality of arsenic mold gas were carried out on butterflies, gnats, flies, frogs, birds, mice, rats and rabbits. During the year or more of tests on rabbits, observations were extended to blood tests and urine analyses. Mice lived eight months in highly concentrated atmosphere of these gases with their strong garlic-like smell, without any observable signs of poisoning. Seven rabbits lived for ten months in such atmosphere, without obervable ill effects; then, after two and one-half months' exposure to arsenic-free air, were again exposed to the arsenic gas atmosphere without noticeable effect. The urine analysis gave arsenic content up to 1.5mg. of metallic arsenic equivalent per day compared to the normal amount in rabmits not exposed to the gas, of 0.07 mg. per day. Other insects exposed continuously for a year remained unaffected by these gases. Wirgin and Lagerberg further mentioned that for more than a year they themselves worked many hours daily in a laboratory air, reeking with this mold arsenic gas, without ever becoming aware of any sickening effects or symptoms of illness.

There are a large number of other laboratory investigations. In chemical laboratories where the chemistry of arsenic has been quite thoroughly investigated, it seems to be definitely established that the arsenic mold gas is not the arseniureted hydrogen, of virulently poisonous characteristic, that is represented to be formed by such mold action. As Hausmann says, we are forced to conclude that the gases evolved by these molds are non-poisonous to mice, and while there is every reason to doubt such wall-paper poisoning ever having occurred, if it did occur, it was surely not due to gaseous arsenics evolved by molds, but would have to be attributed to finely divided powdered arsenic dusted from the walls by mechanical means. Going back a little into the records that were established in connection with the arguments about possible formation of poisonous gas from wall-paper, we find Mr. C. F. Chandler, a Chemist and Sanitarian, at that time in charge of the Health Department of the City of New York, expressing the following opinions:

> That after consulting the best physicians in the city, he could not find any case of arsenical wall-paper poisoning ever having occurred in New York City. That he had carefully considered the whole subject, read everything that was published and concluded there was nothing in it, for which reason, no action was ever taken by the authorities of New York. That in a search of German and French journals, alleged cases which had occurred in 1846, 1866 and 1876, were based on very meagre evidence. That in his opinion, based upon his study of the subject, it was impossible for such a thing to take place.

Mr. Alfred Fletcher in Ure's Dictionary of Arts. Manufactures and Mines says: "It is stated that in a medical work, an in-

stance is noted in which injury had been received by those living in rooms decorated with these (arsenical) colors; surely, were the proximity of such materials injurious. it would not be necessary to search in recondite books for the registry of isolated cases. The fact of the large extent to which such materials have always been employed is sufficient proof that there is no danger attending their use."

A trenchant summary of the effect produced by a study of the historic literature of this subject is embodied in the following citation closing a report made by a careful investigator in 1928, as follows: "I wish to say that although I have never become sick from the biological effect of Gosio gas, that I have gotten pretty sick of the poor and disorderly, and ostentatious work done by the majority of the investigators, as revealed by the literature on the subject." Many careful investigations led to the conclusion that any hazard which might conceivably be attributed to the use of arsenic in wood preservation is so remote as to be negligible. For example, it is incomparably less than the hazard of explosion from a gasoline tank. It is quite possible to devise a set of artificial conditions by means of which the gasoline tank of an automobile might be exploded with disastrous consequences to occupants of the car, but nobody thinks of refusing to ride in an automobile on this account, nor to propose legislation forbidding the use of automobiles with gas tanks.

Another hazard advanced as a partisan argument against the use of arsenic is that a fire might release arsenic fumes which would be dangerous, especially to firemen. In the first place, there is plenty of evidence that most of the arsenic contained in treated lumber would remain behind in the ash; but even assuming that all arsenic present could be volatilized and escape into the smoke, it must occur there as an inorganic oxide, most probably the arsenious oxide As_2O_3, and what hazard there might be, would depend on the amount of arsenic in the smoke and the degree of exposure to inhalation of the smoke. In an average building of treated lumber there might be present a total arsenic content in the impregnated salts to produce some 200 grams of arsenious oxide. The combustion necessary would involve a volume of at least 20,000 cu. ft. of a rapidly rising mixture of air and smoke per second, in which there would be 0.0005 grams of the poison per cu. ft. Calculating the amount of air breathed in a full 30 minutes exposure (far beyond what might occur since the amount of carbon monoxide in the smoke would render any person unconscious in a much shorter time) would provide 0.00075 grams of As_2O_3, in the smoke inhaled. Even of this amount of arsenical dust inhaled, certainly not more than half would be absorbed—the balance being exhaled. The influence of 1/3 of one milligram of As_2O_3 would have no significance unless one were so exposed daily for a period of years. It is evident that this hazard is even less worthy of consideration than the previously discussed arsene gas scare.

The salts of chrome by themselves evidence an appreciable degree of toxicity. As has already been mentioned, their striking value lies in a remarkable effect on other toxic materials, to produce difficultly soluble forms without breaking down toxic values and fixing such precipitated insolubles onto wood fibres. In the dye industry, chrome salts have long been used as mordants to fix coloring matter; and they are found in use in the tanning of hides, to provide peculiarly water-resistant leather. They have long been known for passivat-

ing effect against corrosion and are employed in the chemical industry for lining autoclaves and other apparatus exposed to oxidizing effects. Chrome-plating of metals is a familiar method of preventing rust, and a suitable proportioning of chrome as an ingredient in the manufacture of steel has lately been developed to provide a rust-resisting metal. Dr. Wolman's discovery of the true effects producing fixation and the proper proportioning to bring about such fixation of otherwise water - soluble wood preservatives is one of the noteworthy contributions to the art of wood preservation.

Phenol is more commonly known in its commercial form as carbolic acid and its extremely toxic value is well established. It is one of the principal toxic ingredients of creosote. When nitrated, or chlorinated as a sodium salt, it becomes water-soluble and at the same time shows a striking increase of toxicity. As used in Wolman Salts, it forms complex molecules with some of the other ingredients, and besides the additive value of the individual toxicities, there is found a striking supplementary increase in the efficacy of the resulting compound to inhibit the growth or kill various wood destroying fungi. These phenol compounds are particularly effective against all forms of molds and with a strong tendency to concentrate in that portion of the treated wood near the surface, establish a barrier against mold attack ever, by any possibility, reaching the substrata.

Millions of feet of Fluoride - Phenol - Arsenic - Chrome treated lumber have been handled in loading and unloading, and erection. Barns, cattle sheds, chicken coops, dwellings, factory buildings and structures of all kinds have been in use without one case of reported injury or damage.

WHAT PRICE AMERICA?

[Concluded from Page 42]

have a deep significance and I commend them to the careful consideration of the National Administration right now! Here are Mr. Ickes exact words: "Force account work is more expensive. When any town comes in with a proposal for force account work, it means that they have a political machine—or that they want one!"

TUNNEL

Pictures on Page 48

A novel method of excavating the world's largest bore tunnel in Yerba Buena Island, as part of the San Francisco-Oakland Bay Bridge project, was conceived by Chief Engineer Purcell and his staff. The novelty is that they first build the tunnel and then dig it out.

Altogether three bores were drilled through the island for the tunnel, two at either lower side and one in the crown. All were blocked out into a horseshoe-shaped excavation through the rocky island. This excavation is then concrete and steel lined from three to five feet thick before the inside or core of the tunnel is dug out.

With the tunnel completely lined for most of its length of 540 feet, a power shovel enters the portal to remove the thousands of cubic yards of rock within this 58 by 76-foot bore. Through this bore a four-story building could be pulled upright.

In the photo a huge power shovel may be seen dwarfed by the size of the mouth of this tunnel through which 30,000,000 vehicles and 50,000,000 train passengers can speed annually after the opening of the bridge about the time of the California-Stanford big game in November, 1936.

« « « « With the Architects » » » »

ARCHITECTS' EXAMINATION

The semi-annual examinations by the State Board of Architectural Examiners will be conducted simultaneously in Berkeley and Los Angeles, December 16, 17, 18 and 19.

Candidates must register not later than December 1.

A class of more than thirty applicants for certificates is expected to take the four-day series of tests in Berkeley. The examinations will be conducted at the University of California campus for the Northern district and at the University of Southern California for the Southern district.

The first two days will be devoted to problems in design, the third day to engineering, and the fourth to ethics and office practice.

LIVESTOCK PAVILION

Bids for constructing the first unit of the San Mateo Livestock Pavilion will be opened at Sacramento, December 3, by the State Division of Architecture. The first unit cost is estimated at $640,000. The completed pavilion will cost $1,500,000. Plans call for a one-story reinforced concrete and steel building, 300 by 400 feet, containing a horse show arena, stadium seats for 10,000 persons and stalls for 300 horses, dormitory rooms for grooms and attendants. The building was designed by W. D. Peugh, architect of San Francisco.

TOWN HALL

Plans have been prepared by Dragon & Schmidts, architects, Whitecotton Building, Berkeley, for a two-story frame and stucco city hall at El Cerrito. The estimated cost is $28,000.

The same architects are also preparing plans for alterations to the El Cerrito firehouse to be made following the construction of the city hall.

OAKLAND FACTORY

Plans have been completed by William E. Milwain, architect, 1503 Oakland Avenue, Oakland, for a one-story industrial building to be erected on East 18th Street for Mother's Cake and Cookie Company. The cost is estimated at $30,000.

TO OPEN SAN FRANCISCO OFFICE

S. Charles Lee, architect, of Los Angeles, will open an office in San Francisco, in order to give closer attention to a number of Northern California projects for which he is the architect.

Mr. Lee has moved his Los Angeles office to his own building at 1648 Wilshire Boulevard, Los Angeles.

Working drawings have been completed by Mr. Lee for a one-story frame and stucco town hall at Quincy to cost $25,000.

COUNTY HOSPITAL ADDITION

The Monterey county supervisors have received bids for the construction of a tuberculosis ward addition to the county hospital in Salinas to cost about $50,000. Plans prepared by Chas. Butner of Salinas call for a 1-story frame and stucco ward to contain 22 beds, a barracks building to accommodate fifty persons, a steel water tower and new well. A steam heating system will connect with the main plant of the hospital.

INFORMATION BUREAU

The Association for Advancement of Home Building is now located in the Architects Building, Los Angeles, and is under the direction of Herbert J. Mann. According to its prospectus the organization has a considerable number of the city's representative architects enrolled in its membership. The association's main purpose is to provide the prospective builder with practical, reliable and disinterested information about building.

COUNTY HOSPITAL

The Sonoma county board of supervisors will receive bids November 21 for the construction of a reinforced concrete county hospital at Santa Rosa. This is one of the first of the new PWA building projects to be placed on the market in Northern California. A grant of $110,000 has been allocated toward the work by PWA on an estimated total cost of $245,000. The unit will have a capacity of 200 beds. It was designed by John I. Easterly.

ANOTHER FOR ROY KELLEY

H. Roy Kelley of Los Angeles, has been awarded first prize in the annual competition of House Beautiful for the best house of eight rooms or less completed during the last year. Richard Frederick King, also of Los Angeles, receives first prize for the best house of nine to twelve rooms in the same competition.

Mr. Kelley, graduate of the School of Architecture at Cornell University, has won many prizes for residential work. This is the third successive year he has won first prize in the House Beautiful contest. His latest prize winning work is the residence of the Misses Gail and Marie Houston at 1515 Club View Drive, Westwood.

Mr. King graduated from the School of Architecture at University of Southern California in 1926. His winning effort was the home he designed for Dick Powell, film star, at Toluca Lake.

SAN FRANCISCO MUSEUM OF ART

The following exhibitions are scheduled for November and December at the San Francisco Museum of Art:

British Sporting Prints—through November 27.

Contemporary Mexican Painting—through November 27.

Gothic and Renaissance Tapestries — through December 15.

Hamilton Easter Field Memorial and Collection of American Painting—through December 1.

Annual Exhibition of the San Francisco Society of Women Artists—November 15 to December 15.

Exhibition of Designs for Ballet, Opera Costumes and Stage Sets—November 21 to January 30.

CITY ENGINEER RETIRES

C. M. Thomas, city engineer, of Burlingame has resigned to retire after forty years in the engineering profession. Mr. Thomas was appointed to succeed James S. James as city engineer of Burlingame in May, 1929, and during his long administration he designed and had charge of many large city projects.

Before coming to Burlingame, Thomas was with an engineering company in Long View, Wash., and previously was in private practice in Portland.

He is succeeded by his assistant, Cecil Longson.

SAN FRANCISCO SCHOOL

The San Francisco Board of Public Works on November 27 will receive bids on the last of the city's PWA school building projects financed under the 1933 program. Bids will be opened on that date for constructing Agassiz elementary unit of twelve classrooms to be located at Barlett and Twenty-second Streets. Masten and Hurd are the architects. The estimated cost is $179,000.

PERSONAL

Henry A. Minton, architect of San Francisco and Oakland, is enjoying a two-months trip to Manila. He is accompanied by his daughter, Mary Julia Minton, who will marry Lieut. Com. William Phillip McGirr, U.S.N., in the islands.

Russel Ray has opened an office at 4367 Oakwood Ave., Los Angeles. Mr. Ray was formerly located in Santa Barbara.

Georgius Y. Cannon, has moved his office from 901 Beaux Arts Building, Los Angeles, to Room 519 Security Building, 117 East Colorado Ave., Pasadena.

Richard E. Lytel and LaMonte Shorett, both graduates of the School of Architecture, University of Washington, recently formed a professional partnership and established a studio at 1003 Securities Building, Seattle.

Tracy A. F. Moberg, architect, has resumed active practice with office in Room 468, Skinner Building, Seattle.

Charles Haynes, architect, recently resumed active practice in Seattle. He has opened an office in the 814 2nd Avenue Building, formerly known as the Mehlhorn Building. During the past several years Mr. Haynes has been active in Southern California.

Bjarne H. Moe and George W. Groves, have become associated and have established a studio at 2318 Second Avenue, Seattle.

Carl F. Gromme, architect, has moved his office from the Masonic Building to the Freitas Building, Fourth and B Streets, San Rafael.

MAY BE HEADED THIS WAY

[*The Octagon*]

A man impersonating Royal Barry Wills, architect of Boston, in possession of a bronze medal which was awarded to Mr. Wills in the 1934 Better Homes in America Competition, has been presenting himself to architects for the purpose of cashing worthless checks.

Mr. Wills has furnished the information that the man in question called at his office seeking a position and removed the medal from his office at that itme. Mr. Wills describes him as thirty years old, slim, sandy mustache, and wearing a black double-breasted suit.

W. H. I. Fleming, architect of Washington, whose generosity was recently imposed upon by this man's hard luck story, describes him as follows:

Age thirty, six feet tall, weight one hundred forty pounds, dark complexion, and no mustache.

Regardless of varying descriptions this imposter should be easy to identify. Architects approached by him should reach for the telephone instead of the check book.

CONVENTION OF STRUCTURAL ENGINEERS

The fourth annual convention of the Structural Engineers' Association of California was held at Fresno October 18 and 19. President John B. Leonard opened the convention with a review of the activities of the Association during 1935, and recommended the adoption of measures which will result in closer cooperation between the engineer, the architect and the building official, and by so doing, benefit the building industry as a whole.

David Merrill, managing secretary of the Pacific Coast Building Officials Conference, in reporting on the convention of the building officials, stressed the need and desirability of closer contact between engineers, architects and building officials and stated that the officials, at their own convention, had taken the necessary preliminary steps which will make this cooperation of immediate benefit to the industry. President Leonard appointed a committee of four, Murray Erick and A. M. McConnell of Los Angeles and H. J. Brunnier and L. H. Nishkian of San Francisco, to report on ways and means of effecting closer cooperation between the structural engineer and the building official.

Two half-day sessions were devoted to a discussion of the report of the building code committee dealing with the proposed revisions of the rules of the Division of Architecture, relating to the safety of design and construction of public school buildings in California. The original rules became effective in April, 1933, and their operation has been closely studied by the code committee during the last year. The changes recommended by the committee were discussed in considerable detail on the floor of the convention. Final action on the recommended changes of the committee is to be taken independently by the northern and southern associations.

Papers on subjects of general interest to the profession were read at the final session. Murray Erick and H. J. Brunnier presented papers on the subject of "Relation Between the Engineer, Employer, and Employee," and L. J. Waller and L. H. Nishkian reported on the subject "Engineering Fees and Practice." The final paper entitled "The Structural Engineer and Lesgislation", was presented by Anthony J. Kennedy, attorney-at-law of Sacramento, and is printed in full elsewhere in this issue.

STRUCTURAL ENGINEERS

The California State Board of Registration for Civil Engineers has issued structural permits to Robt. C. Kennedy of Oakland and Wallace E. Belcher, Los Angeles.

New certificates of registration as civil engineers have been granted Albert Ayer Peters of Sausalito and Jno. S. Gallagher, Los Angeles.

ENGINEERS INSPECT DAMS

On Wednesday, October 23, through the courtesy of Fred H. Tibbetts, chief engineer of the Santa Clara Valley Water Conservation District, members of the San Francisco Section, American Society of Civil Engineers, inspected the dams of the District, now at various stages of construction.

The party first visited the Coyote Dam, (earthquake-proof straddling the Hayward Fault), following which the dams at Calero, Almaden, Guadalupe, Vasona, and Stevens Creek were visited. one excursion committee included O. W. Peterson, chairman; R. G. Cone, D. R. Warren, and S. D. Bechtel.

COAST ARCHITECTS HONORED

The following Pacific Coast architects have been named on Standing and Special Committees of The American Institute of Architects to serve until the convention of 1936:

Finance—Edwin Bergstrom, Los Angeles.

Practice—Harris C. Allen, San Francisco; Ralph C. Flewelling, Los Angeles; Walter E. Church, Portland, Ore.; Albert M. Allen, Seattle, Wash.

Judiciary—David J. Witmer, Los Angeles.

Public Works—Henry C. Newton, Los Angeles; Armond R. Bean, Portland; Carl F. Gould, Seattle.

Education—Ellis F. Lawrence, Portland, Ore.

Competitions—Albert J. Evers, San Francisco.

Structural Service—John J. Donovan, Oakland; Henry C. Newton, Los Angeles; Wm. H. Crowell Portland; Joshua H. Vogel, Seattle.

Preservation of Historic Buildings—Irving F. Morrow, San Francisco; Wm. P. Lodge, San Diego; Henry F. Withey, Los Angeles; Jamison Parker, Portland; Paul Richardson, Seattle.

Registration Laws—A. M. Edelman, Los Angeles; Warren C. Perry, San Francisco; John V. Bennes, Portland.

City and Regional Planning — Reginald D. Johnson, Los Angeles.

Standing Accounting — Henry H. Gutterson, San Francisco.

Honor Awards — Raymond W. Jeans, San Francisco; Arthur Loveless, Seattle.

Schedule of Charges—A. H. Albertson, Seattle.

Sub-committee on Health and Safety—Albert Farr, San Francisco; Carl F. Gould, Seattle.

Housing — Harris C. Allen, San Francisco; Eugene Weston, Los Angeles; Walter E. Church, Portland; Wm. J. Bain, Seattle.

SOUTHERN CALIFORNIA CHAPTER

At the October 15th meeting of the Southern California Chapter, A.I.A., Dr. W. S. Ford, chief deputy superintendent of the Los Angeles Board of Education, spoke on the subject of school building needs in Los Angeles. He called attention to the many temporary and antiquated structures that are in use today and the necessity for providing safer and more suitable housing. Doctor Ford's talk was illustratd with lantern slides.

Treating with the present aspects of modern school house engineering, Murray Erick, structural engineer, stated that there have been no recent changes in engineering practice and no new theories developed, although the Field Bill has brought about distinct changes in construction. He said that Southern California schools suffered in the earthquake of March 10, 1933, because of inadequate design and the use of materials that were not adaptable. Mr. Erick believes that a mistake is made when an architect is not engaged to supervise his work.

Elmer Grey spoke of several incidents in the early life of H. Van Buren Magonigle, New York architect and Institute member, who died several weeks ago. Mr. Magonigle's contributions to *Pencil Points* were widely read and discussed.

The following members and guests attended the meeting: A. C. Zimmerman, Edward Cray Taylor, Ed Cline, Harbin Hunter, Graham Latta, Carleton M. Winslow, Sumner Hunt, Douglas McLellan, J. J. Miller, Ralph Flewelling, Henry F. Withey, Elmer Grey, Ben O'Connor, M. L. Barker, J. E. Allison, C. Raimond Johnson.

Dr. W. S. Ford, Murray Erick, William Richards, Henry Carleton Newton, R. Germain Hubby, Joseph Kaiser, Richard Neutra, H. C. Chambers, Walter Davis, George Adams, J. J. Backus, Albert C. Martin, Samuel Lunden, Eugene Weston, Jr., Walter L. Reichardt, Paul Robinson Hunter, Raphael Nicolais.

S. F. CHAPTER ELECTS OFFICERS

The regular meeting of Northern California Chapter, A.I.A., was held at the Plaza Hotel, San Francisco, at 6:30 P.M., Tuesday, October 29, Albert J. Evers presiding.

It being the annual meeting, Mr. Evers delivered his presidential report of activities during the year and offered suggestions for a more widespread interest in the affairs of the profession.

Reports of Committees were submitted and accepted with thanks as follows:

Committees on practice, competitions, legislation, public information, education, building laws, entertainment, membership and exhibits.

Co-operating organizations submitted summaries of the activities of the groups to which they are assigned. These included the San Francisco Federation of Arts, California Roadside Council, Architects' and Contractors' Conference Board, State Association of California Architects, San Francisco Housing Association, Advisory Committee to Art Commission, Producers' Council Club and the Advisory Committee to the Board of Public Works.

A number of the reports contained valuable recommendations toward future policy and program.

It was moved by Mr. Miller and carried that the Chapter, authorize payment in the pro-rated amount of $35 toward the traveling expenses of Messrs. Meyer and Steilberg to Los Angeles in connection with the Uniform Code.

The suggestion was made to the Exhibit Committee that in subsequent exhibits the contractor's name appear on Honor Award Certificates.

Officers were then elected for the year 1935-36. In accordance with the recommendation of the nominating committee which was submitted at the September meeting, the following were elected:

President, Will G. Corlett; vice president, Warren C. Perry; secretary-treasurer, James H. Mitchell; directors for 3 years, Albert J. Evers and Edward L. Frick; director for one year, Gardner A. Dailey.

With the newly elected president in the chair, the following business was introduced:

Active co-operation with the State Association in making the State Housing Act effective was urged by Mr. Johnson and approved.

It was instructed that information concerning building loans to veterans be included in the next notice to members.

Mr. Hays moved that the Chapter extend its hearty appreciation to Mr. Evers for his faithful and valued leadership during the years of his office. Unanimous approval was signified. It was directed that a fitting resolution be drafted in committee and that printed copy thereof be presented to the retiring president. Messrs. Perry, Hays and Gutterson were so appointed.—J.H.M.

CONTRACTORS LICENSE LAWS IN WESTERN STATES

Laws requiring the registration of contractors are now in operation in California, Arizona, Utah, Nevada, Idaho and Montana. In the first three mentioned states all general and subcontractors must register; in the last three mentioned only public works contractors and subcontractors on public works jobs are required to have licenses.

California was the first western state to enact a contractors' license law, approved June 13, 1929. Montana is the last to adopt such a law, enacted by the 1935 Legislature of that state. A contractor's license bill was introduced in the 1935 session of the Oregon Legislature but it failed to pass.

California's law has been progressively amended at each succeeding session of the Legislature to correct deficiencies and strengthen provisions for its enforcement. Under amendments passed at the 1935 session administration of the law has been vested in a board of seven members recently appointed by the governor, but which has not yet organized. All the members of the board are contractors actively engaged in business for the last five years and they will serve without pay. Under the amended law contractors are classified for the first time as "general engineering contractors," "general building contractors" and "specialty contractors."

The California Contractors State License Board, as it is officially known, consists of one engineering, three general building and three specialty contractors. They are authorized to appoint a registrar, with approval of the director of professional and vocational standards, who will be executive secretary of the board; also a deputy registrar and other assistants and subordinates to administer the law, all to be under civil service. The law further provides that the board "under such rules and regulations as it may adopt shall have the power and authority to examine, classify and qualify applicants for contractors licenses under the provisions of this act."

The license fees remain unchanged, $10 for an original license and $5 for renewal, all licenses expiring at the close of the fiscal year, June 30.

As under the old law any undertaking on which the contract price is less than $200, is exempt, "provided, however, that the exception shall not apply in any case wherein the work of construction is only a part of a larger or major operation, whether undertaken by the same or a different contractor, or in which a division of the operation is made in contracts of amounts less than $200 for the purpose of evasion of this act, or otherwise."

Arizona

The Arizona law "regulating the business of contracting, requires registration of all corporations, firms, associations or individuals doing construction work for a lump sum, fee or compensation other than wages, without limitation as to cost of the work, but does not include material suppliers who do not fabricate their products into the work. Exemptions include work done by authorized representatives of Federal or state government or political subdivisions thereof; trustees or officers of a court; construction or repair of reclamation works; construction for agricultural purposes; operations of public utilities and sole owners of property improving same for their own use.

Foreign corporations are required to qualify under Arizona laws to do business in that state to be eligible to a license.

License fee is $10 per year and license is good until expiration on June 30 of the fiscal year in which it is issued. Application for renewal must be filed with registrar not later than July 30 of each year with fee of $10, otherwise the license is renewable only on payment of a fee of $20.

Penalty on conviction of violation of the law, or conspiracy to violate it, is a fine of not less than $100 nor more than $500, or imprisonment

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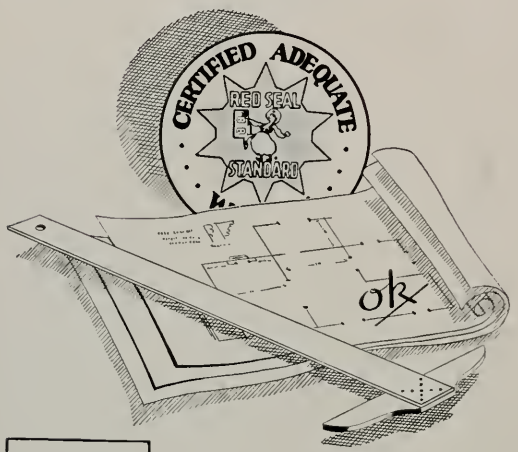

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in county jail for not more than six months, or both, at discretion of the court.

The law is administered by a registrar, appointed by the governor for a term of two years. H. C. Sparks is the present registrar and his office is in the Arizona State Building, Phoenix.

MONTANA

Three classes of licenses are issued in Montana, as follows:

Class A entitles holder to do any public work without limitation as to value of any single project and the fee is $200.

Class B entitles holder to construct any project the value of which does not exceed $50,000, and the fee is $100.

Class C entitles the holder to do any work the value of which is not in excess of $25,000 and the fee is $25.

Penalty for conviction of any violation of the act is a fine not to exceed $500 or imprisonment in jail for not more than 6 months or both.

James H. Stewart is chairman and George Fowler, secretary of the state board of equalization, Capitol Building, Helena, Montana.

IDAHO

The Idaho state law of 1933 applies only to public works contractors who undertake any project estimated to cost more than $5000, including both general and subcontractors. The law is administered by the state commissioner of public works as registrar.

License must be issued or denied within 30 days after filing of application and runs until expiration of the calendar year in which it is issued. Fee for an original license is $100 and for renewal $50; application for renewal must be made before March 1 following expiration. The license is non-transferrable and must be signed by both the registrar and licensee.

Penalty on conviction of any violation of the law is a fine of not more than $300 or imprisonment for not more than 6 months in jail, or both.

NEVADA

The Nevada state law of 1931 provides for "registering public works contractors" only who undertake any contract the total value of which exceeds $10,000, but includes also subcontractors who do any part of a public works contract, the value of which also exceeds the sum mentioned. The law is administered by the state controller as registrar.

Licenses must be issued within 10 days after receipt of applications, must be signed by the licensee and are non-transferrable. A fee of $200 must accompany the application and the license runs until expiration on June 30 of the fiscal year in which it is issued.

Penalty for violation of the law on conviction is a fine of not more than $500 or not more than 6

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

In many instances NRA prices are still in force. Another month may find some material changes in price quotations. A 10% raise is being considered. Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $35 to $40 per 1000 laid, (according to class of work).

Face, $75 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.10 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, **$14.00** job cartage.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job)

carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Discount 5%.

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Eliott top gravel, at bunkrs	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f.o.b. Lake Mejella), $2.75 to $4.00 per ton.

Cement, $2.25 per bbl. in paper sks.

Cement (f.o.b. Job. S. F.) $2.90 per bbl.

Cement (f.o.b. Job. Oak.) $2.90 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Calaveras White ..... $6.00 per bbl.

Medusa White ..... $8.00 per bbl.

Forms, Labors average 25.00 per M

Average cost of concrete in place, exclusive of forms, 30c pe rcu. ft.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

4½ inch Concrete Basement floor..... 14½c to 16c per sq. ft.

2-inch rat-proofing..... 6½c per sq. ft.

Concrete Steps ..... $1.25 per lin. ft.

Damppraofing and Waterproofing—

Two-coat work, 15c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.00 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $7.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 50 cents; clay or shale, 80c per yard.

Teams, $10.00 per day.

Trucks, $18 to $25 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot. Plate 75c per square foot.

Art, $1.00 up per square foot.

Wire (for skylights), 35c per sq. foot

Obscure glass, 26c square foot.

Note—Add extra for setting

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$30.00 per M
No. 2 common	24.00 per M
Selection O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	47.00 per M
1x4 No. 3 flooring VG	40.00 per M
1x6 No. 2 flooring VG	42.00 per M
1¼x4 and 6, No. 2 flooring	50.00 per M

Slash grain—

1x4 No. 2 flooring	$37.00 per M
1x4 No. 3 flooring	33.00 per M
No. 1 common run T. & G.	28.00 per M
Lath	6.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.00 per bdle.
Redwood, No 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.		
1 1-16x2¼" T & G Maple	132.00 M ft.		
⅞x3½ sq. edge Maple	140.00 M ft.		
	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Otd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Otd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.

Nails, $3.50 base.

Sash weights, $45 per ton.

Millwork—

O. P. $100.00 per 1000. R. W. $106.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.

Dining room cases, $7.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.

For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 29c per yard
Three-coat work ..... 40c per yard
Cold Water Painting ..... 10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lbs. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Medusa finish, No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.
2.5-lb. metal lath (dipped) ..... .17
2.5-lb. metal lath (galvanized) ..... .20
3.4-lb. metal lath (dipped) ..... .22
3.4-lb. metal lath (galvanized) ..... .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations. $13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale ..... $1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed)

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel, average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.
Note—Consult with agents.

Tile—Floor, Wainscot, Etc.—(See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestos Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	$9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	$7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

Reilly Transparent Penetrating Creosote Preserves the Wood in the Bing Crosby Ranch Home from termites, beetles and decay.

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months in jail, or both, at discretion of court.

Henry C. Schmidt is state controller and ex-officio registrar, Carson City, Nevada.

UTAH

Utah state law of 1933 embraces the general provisions of the original California State Contractors' Law, requiring all general and subcontractors undertaking any work costing more than $200 to be registered.

The original license fee is $10 and fee for renewal the same, all licenses expiring on December 31 of each year. A license must be issued within 10 days after filing of application.

Violation of the law is punishable by fine of not more than $500, a jail sentence of not more than 6 months, or both.

BOOK REVIEWS

By EDGAR N. KIERULFF

SPECIFICATION DOCUMENTS *for Building Materials and Construction.* Classified and arranged by David H. Merrill, Assoc. Mem. Am. Soc. C. E. and Theodore C. Combs, Assoc. Mem. Am. Soc. C. E. 522 pages, cloth, $5.00, fabricoid leather, $7.50. Published for the Pacific Coast Building Officials Conference by R. C. Colling and Associates, Los Angeles.

Architects, engineers, contractors, building officials, and in fact, all who have to do with the construction of homes or business and industrial buildings, bridges and highways, will find this book of unusual value.

It includes under one cover for the first time all specifications referred to in the Uniform Building Code under which 150 cities and counties in the United States operate. These documents are legally a part of the Code, and are required to be filed with city or county clerk. Until now they have been found only in pamphlet form separately and several only in typewritten or mimeographed sheets.

"Specification Documents" contains 63 standard and tentative specifications and test programs

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compiled from many sources, classified and arranged for ready reference. Nearly every major engineering and technical society has assisted in their preparation. The publishers mention among the sources the following: American Society for Testing Materials; American Concrete Institute; National Fire Prevention Association; National Board of Fire Underwriters; Underwriters' Laboratories, Inc.; American Welding Society; American Wood Preservers Association; U. S. Department of Commerce, Bureau of Standards; American Institute of Architects; American Society of Mechanical Engineers; American Society of Refrigerating Engineers; and the Research Department of the Pacific Coast Building Officials Conference.

The text of "Specification Documents" is amplified by many drawings and illustrations. The book is so bound that it will open flat at any page.

A HOUSING PROGRAM FOR THE UNITED STATES. A report prepared for the National Association of Housing Officials. Publication No. 48, Chicago. Public Administration Service, 1935. Pp. v & 41. Fifty cents.

Some months ago the National Association of Housing Officials issued a slim pamphlet entitled "A Housing Program for the United States," endorsed by over eighty leaders in the housing movement and in government. This pamphlet has already gained acceptance as the most comprehensive and well ordered statement of the principles underlying a public housing program yet presented in the United States.

Its recommendations carried particular weight because of their origin. During the fall of 1934, the Association sponsored a visit to fourteen American cities by a group including Sir Raymond Unwin, former President of the International Federation for Housing and Town Planning, probably the leading expert in the field; Mr. Ernst Kahn, economist and former manager of housing projects at Frankfurt a/M; Miss Alice Samuel, a representative of the British Society of Women Housing Estate Managers; Mr. Henry Wright, planner and designer of pioneer low-cost housing projects in this country; and Mr. Ernest J. Bohn, of the Cleveland City Council, president of the Association.

At the conclusion of the tour, the party drafted a report, a summary of which was presented to a distinguished group of American leaders in the housing movement, in a four-day conference at Baltimore. That summary, revised in the light of their discussion, was issued as the pamphlet already mentioned.

Since then, many requests have been received for the full report upon which the summary was based. This full report, largely drafted by Sir Raymond Unwin, is now made available.

ORIGIN OF NAMES OF CALIFORNIA COUNTIES

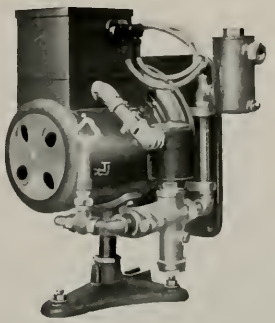
This is the third article in the series giving derivation of the names of California counties, the first appearing in September:

Del Norte County—Created March 2, 1857. The name of this county signifies "the north", and the county being situated in the extreme north (west) corner of the state derived its name from its geographical position.

This county, one of California's favored spots of natural charm, is a land where the waters of the Pacific wash a shore line of rare beauty, where mammoth redwood trees, giant firs, cedars, pines and verdure-clad valleys are cut by crystal-clear streams winding through forests and rock-ribbed canyons. Del Norte is not an agricultural county as the government forest reserve covers 78 per cent of the land area. Acres suitable for cultivation aggregate 90,000, of which 36,965 are under cultivation. With no railroads, Del Norte until recent years was California's last frontier. But state highways have made it easily accessible and Crescent City harbor, now under construction, is destined to become the sixth major harbor on the Pacific coast. It will provide an outlet for millions of tons of copper, gold ore, lime rock, 80 per cent of all the known chrome ore in the nation, silica, marble, manganese, coal and billions of feet of lumber. Del Norte hopes that eventually an air base will be established at Crescent City as it lies about midway between San Francisco and Puget Sound, making it a logical position for government-owned aircraft. Population: 4739. Area: 1024 square miles.

Fresno County—Created April 19, 1856. The word "Fresno" in Spanish signifies "ash tree", and it was because of the abundance of mountain ash in the mountains of this county that it received its name.

Fresno is California's sixth largest county. After losing 2000 square miles for the creation of two new political subdivisions it remains three times the size of the state of Delaware. Fifty years ago the county was a part of arid plains; wheat growing was a gamble against the rainfall; sheep and cattle roamed over immense areas; and land was almost free, so unpromising were conditions without irrigation. Today approximately 550,000 acres are irrigated and 1,493,477 are under cultivation. Fruit orchards cover 300,000 acres, or nearly 469 square miles, and the county ranks second in the state with 10,334 farms. The United States Department of Agriculture rates it as one of the richest counties, agriculturally, in America. Fresno produces 27 per cent of the country's



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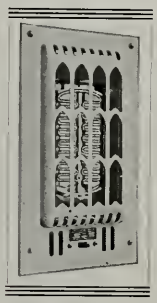

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grapes, 32 per cent of the figs and 10 per cent of the peaches.

Kettleman Hills, one of the oldest oil-producing districts in California, are in western Fresno. Statistics show that Fresno county has a greater consumption of electricity per capita than any other section of its kind in the United States.

In addition to a portion of General Grant National Park, Fresno has many beauty spots for the lovers of the outdoors. Population: 144,379. Area: 5950 square miles.

Glenn County—Created March 11, 1891. This County was formed out of the northern portion of Colusa County, and derived its name from Dr. Hugh J. Glenn, who, during his lifetime, was the largest wheat farmer in the state, and a man of great prominence in political and commercial life in California.

Practically every commercial farm product grown in California can be successfully produced in Glenn county. Alfalfa is one of the major crops, yielding from five to six tons per acre with five cuttings, and the acreage is increasing steadily, due to the never-failing demand for dairy products. Glenn is one of the leading counties in dairying in the Sacramento Valley.

A large portion of the beautiful California National Forest and the Orland Project of the United States Bureau of Reclamation are in this county. The Orland Project, of which the city of Orland is the business and geographical center, is the only government irrigation project lying wholly within California. It comprises 20,750 acres, with 146 miles of canals and laterals, 92 miles of which are concrete lined.

One of the largest irrigation districts west of the Rockies is the Glenn-Colusa. Its construction and later improvement entailed a cost of approximately $6,000,000.

Great bands of sheep roam the foothill and mountain ranges and this section produces some of the earliest and best lambs in the state. In Western Glenn are deposits of copper, manganese, sandstone and soapstone. During the World

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War, large quantities of chromite swelled the country's mineral production. Population: 10,935. Area: 1337 square miles.

Humboldt County—Created May 12, 1853. This county derived its name from Humboldt Bay which was named for Baron Alexander von Humboldt, the eminent scientist, by Captain Ottinger of the ship Laura Virginia.

Known as the "Redwood Wonderland", Humboldt combines every known economic attraction with the advantages of mountain, forest and coast scenery, a world port and a famous highway. Industries range from the growing of flowers to the shipping of lumber and live stock, with butterfat, lumber, wool, beef, fruits and berries as the principal products. For 108 miles this county stretches along the scenic coast of Northern California, separated from Oregon by Del Norte county and with an average width of 35 miles between the Pacific Coast and Trinity. Rhode Island and Delaware could be placed within its boundaries and there would be 543 square miles to spare.

Motorists entering from the south over the famous Redwood Highway gradually enter Humboldt's primeval forest of giant redwoods stretching for 75 miles. There are 400,000 acres of redwood timberland. The cutting of timber and its manufacture into lumber give employment to 7,000 men whose annual pay roll check exceeds $10,000,000. Some of the largest lumber mills in the world are located in Humboldt. Stock raising is an important industry. A recent United States farm census gives the county 100,000 head of sheep and 80,117 head of cattle. Humboldt is famed as a dairying district. The county is proud of its port at Eureka which during the past several years has handled $25,000,000 worth of water-borne commerce annually. Population: 43,233. Area: 3575 square miles.

NEXT MONTH—IMPERIAL, INYO, KERN AND KINGS COUNTIES

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DRAFTSMEN ORGANIZE

In Los Angeles a local Chapter of the American Society of Draftsmen has been launched with headquarters at 424 South Broadway. It is a non-profit corporation organized for the advancement of the profession of drafting and all its kindred arts. It will be the Society's aim to compile useful information pertaining to the profession and disseminate this data to the members with a view to unite, promote and standardize the profession in all of its various branches. Professional zeal will be fostered by establishing just and equitable principles and developing a broad acquaintanceship among persons engaged in this work.

The movement in the South is reported to have met with an encouraging response and with improved conditions in the building industry a large membership is anticipated. The movement is national in scope and letters of inquiry have been received from draftsmen in virtually every state.

The immediate objectives of the Society are: To—

1. Establish drafting as a profession, through publicity and a program of constructive activities.

2. Establish minimum requirements to qualify a draftsman under the various classifications.

3. Protect and improve the ethics of the drafting profession.

4. Make this movement national in scope by the starting of chapters in the larger municipalities.

5. Operate a Placement Bureau for the purpose of placing men in positions commensurate with their ability.

Members of the board of directors of the Society are:

Henry Wall, president, Los Angeles City Planning Commission.

George Lane, vice-president, Union Oil Company, Engineering Department.

Dave Springmann, Union Oil Company, Engineering Department.

Bert Julio, registered civil engi-

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Harold Meserve, County Forestry Department.

L. B. Withers, Los Angeles Board of Education, Architectural Division.

H. R. Saunders, Los Angeles City Engineer's Office, City Hall.

W. G. McNeil, Metropolitan Water District of Southern California.

Forrest Burke, Automobile Club of Southern California.

J. G. Gilbert, Texas Company, Engineering Department.

STYLISTIC TRENDS

Taking cognizance of a new stylistic trend in home designing, the Federal Housing Administration, through Miles L. Colean, director of the Technical Division, has issued a report on the Division's findings for the guidance of field officers.

Mr. Colean finds the "modern design" to be more than a new method of exterior treatment. He finds this exterior treatment to be simply the final expression of fundamentally related developments in plan and structure.

Designed primarily to aid valuators in rating modern structures, Mr. Colean has produced a report that includes a detailed analysis of the movement. He believes it to be of great present vitality whose sound elements are those arising from the desire to produce dwellings better fitted to present day living than those to which we have become accustomed.

Coincident with the appearance of the modern dwelling so designed is the home which pretends to be modern but whose new fashioned dressing is divorced from planning or structural trend. For the latter, Mr. Colean sees but a short life, believing new designs can prevail only when developed as a result of modern needs and a new mode of living.

Mr. Colean says in part:

"Modern planning tends to ignore the principles of balanced elements and symmetrical shapes

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which, for instance, characterize the Georgian or French Renaissance styles. It approaches the layout of the elements of a house strictly from the point of view of the use to which the rooms are to be put and to the functional relationships between rooms. Rooms combining several of the functions of living and the elimination of rooms devoted to special functions are frequent.

"The elimination of housework due to carefully studied functional relationships and the increase in comfort arising from the determination of spaces by their intended uses, obviously increase the amenities of living.

"More novelty, whether in plan, structure or exterior appearance, which is unrelated to underlying economic, social or climatic factors is not likely to have a long duration. Similarly, novelty in exterior appearance which is unrelated to logical developments in plan or structure is likely to earn the same fate.

"The concept of the modern house as a perforated box or an assemblage of grotesque shapes no longer prevails. Although it is true that simplicity of the forms to be dealt with and the abandonment of decorative features puts a heavy burden upon the imagination of the designer, it is nevertheless possible to produce a house which is pleasing to the eye, readily adaptable to topographical features and otherwise harmonious with its environment."

Modern architecture, Mr. Colean believes, has begun with a rationalized plan, has partially proceeded to a rationalized elevation and may proceed further and produce a structural system and a vocabulary of materials peculiarly suited to it.

"If it can make this third step," concludes Mr. Colean, "its justification in breaking away from the traditional handling of forms and materials will be strengthened and its chances of permanence as a true style will be greatly augmented."

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Of the Architect and Engineer, published monthly at San Francisco, Calif., for October 1, 1935.

State of California } SS.
City and County of San Francisco }

Before me, a notary public in and for the state and county aforesaid, personally appeared W. J. L. Kierulff, who, having been duly sworn according to law, deposes and says that he is the Business Manager of The Architect and Engineer, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (if daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

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W. J. L. KIERULFF, President.

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¶ The December issue of The Architect and Engineer is to be a special one. Its subject: The Modern Movement in Architecture.

¶ It will be a representative summary of the best modern work of the coast. With it a few examples of the worst.

¶ For there is modernism. And there is psuedo-modernism.

¶ One has its roots deep in profoundly-based convictions and principles, a new form-sense. The other is a meaningless, imitative gesture.

¶ The typographical makeup of the December issue will be designed by Pauline Schindler. The advertising will consist of an illustrated portfolio of those factors which constitute the stuff of modern architecture.

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GRADE SEPARATIONS

The details of the Federal emergency grade separation program in California, involving 39 projects in 17 counties, to be financed principally with the $7,500,000 of Federal Works Progress Funds allocated to California, have been announced by Director Earl Lee Kelly of the Department of Public Works.

In releasing the list of projects for publication, Director Kelly said:

"The program is already under way with projects now being advertised and the Division of Highways is making every effort to speed up engineering plans and specifications, right of way negotiations and all preliminary details necessary to having men at work on the projects by December 15th as required by the Federal government.

"I am confident that at least $5,000,000 of the $7,500,000 Federal funds allocated to California under the Federal Emergency Relief Apportionment Act of 1935 will be under contract or advertised by that date, providing work for many men now on relief rolls which was the primary purpose of Congress in passing the act.

"While the major part of the expenditure will be taken care of by the Federal funds, the Government will not pay for any right of way or property damages and such funds must be provided by the State when the projects are on state highways, or by counties and cities on other roads or streets.

"The Government has placed several restrictions with regards to the way this money will be spent. It is required that the money be apportioned to the various railroads according to their mileage in the state; that at least 25% of the money be spent off of the Federal Aid Road System and at least 30% to 35% in municipalities or metropolitan areas.

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. Schindler, editor of this special issue.
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NOTES AND COMMENTS

The appearance of the preliminary sketch for the San Francisco Exposition, celebrating the opening of the Bay bridges, comes as something to be viewed with alarm,—were it not for the reassurance we have that this is not only very preliminary, but also probably has little to do with the ultimate actuality. It serves merely as a teaser.

Yet tease us it does.

The sketch announces in a preliminary way the general intent on the part of the Commission that the architecture of the Exposition shall be "modern". Unfortunately, it is less modern, as here shown, than "modernistic".

This issue of **The Architect and Engineer** has as its intent not only the presentation of a slice of the excellent modern work now being done on the Pacific coast, —equalled, in quality and in quantity nowhere else in the country,—but also the drawing of the distinction between the modern and the pseudo-modern.

The preliminary sketch of the Exposition could very well serve as an example of the pseudo-modern,—an empty style which, as Irving Morrow points out in an article later in the issue, is comparable with the sterility of "l'art nouveau" a generation ago.

No mere manner has survival value. Style to have validity must be a bi-product of a body of conviction, or principles, of basic essentials. Manner by itself, unrelated to these, has no reason for existence. It rightly offends those who take architecture seriously.

The Paris Exposition of 1900 was a horrendous example of style. It influenced its period wickedly, and accounts for much of the worst that arose in the structures immediately following. It was entirely unenduring, however. There was nothing in it to last; nothing to affect life positively.

The Chicago Century of Progress Exposition, however, occurring at a time of high interest and vitality in the movement for a contemporary creative architecture, necessarily had to accept its momentum. It will be remembered that a bitter struggle arose over the issue whether Frank Lloyd Wright should be invited to direct the architectural integration of the exposition. Either all or none, was the verdict. It is impossible to illustrate the central principle of organic integration fractionally,—and yet it is this which provides the keynote, the basis, of his work, and the work of all great moderns in architecture.

Wright was therefore left out. Individual "moderns" were invited to participate. Paul Cret and others drawn from various parts of the globe, did clever units in an un-unified whole. If you could abstract such single separate parts from the whole, they could be very much enjoyed, in a confused and interrupted way. There was abundance of "style", and even, within the confusion, of individual examples of taste.

Every great exposition tends to influence the architectural orientation which follows it. As a result of the Chicago Century of Progress Exposition we can expect, and we already observe, a development of "modern" building which has the unfortunate imbalance of style without content, lacking that essential relatedness of parts to the whole which underlies all good architecture. Nevertheless, the Chicago Exposition has at least helped to correct some of the worst tendencies in the pseudo-modernism which preceded it,—the silliness of empty geometrization, the tastelessness and the banality. There were good examples of the new space-feeling; there was inventiveness and freshness and vitality.

The San Francisco Exposition should logically take the next step in architecture. That is, a development of organic and three-dimensional thinking, of integrated relatedness of all parts to the whole. Architectural commissions for expositions are of necessity beset by many political pressures and motivations. Here is a major situation which offers opportunity for genius to operate—if we can allow ourselves the luxury of the selection of genius, instead of submitting to the forces of political expediency.

Architects have suffered frustration for so many years that it would be no wonder if there were a rush here to seize power, irrespective of talent.

A commission may decide: "We've got the power. We'll use it". Or, on the other hand, it may ask: "Who are the men, here, yonder, anywhere at all on the planet, who are most brilliantly equipped to create significantly and momentously in basic modern terms?"

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A MOUNTAIN-TOP RESIDENCE FOR MADAME GALKA E. SCHEYER, IN THE SANTA MONICA RANGE OVERLOOKING HOLLYWOOD TOWARD THE SEA.

RICHARD J. NEUTRA, ARCHITECT. GREGORY AIN, ASSOCIATE.

The house was built about the idea of a gallery for modern pictures. An equally important consideration was the sort of life its inhabitant desired to live there,—sunny, free, informal, out-of-door living, combined with a highly developed aesthetic emphasis.

The living-room, which constitutes the gallery, is therefore open to the south completely, with a commanding view of a panorama of many miles

THE
ARCHITECT
AND
ENGINEER
1935
DECEMBER

from the city to the sea. Its low doors of glass slide wide open with a push of the finger, upon a long outer gallery or balcony, wide enough for dining or resting. It is protected by an overhanging cantilevered roof, which protects the room from glare, and makes possible a soft reflected light for the pictures hung within.

These are hung upon walls of pearl-grey. They are illuminated at night when desired by portable electric lamps at floor level.

Of equal charm with the rest of the house is the bath-dressing room. No severity of sanitary emphasis dominates here. The frames of the small window-panes serve as shelves for minute sculptures from China, Bali, and New Mexico. Over the bathtub hangs a painting of Picasso.

The G. E. Scheyer residence, Los Angeles.
Richard J. Neutra, architect. Gregory Ain, associate.

The living room with doors rolled open at night.

Entrance to the house is by way of a stairway from below, through an antechamber opened by automatic push-button from above. Privacy is thus assured for the living quarters above. Beyond the house at the side is a small intimate bit of garden, contrasting comfortably with the scale of the panorama commanded from the upper gallery. The garden is reached from the kitchen for informal meals, and from the sleeping room for sunning. An out-of-door tub of concrete, is set in the grass and fringed with green fronds, for leisured bathing.

FORM follows function. With this principle modern architecture begins.

Liberation from the forms of tradition in architecture has at the same time meant liberation of the imagination to conceive new ways of life, new forms with which to frame and condition it.

An entirely new vocabulary of form was called for.
In the architecture of Frank Lloyd Wright there was an alliance of the principle of functionalism with a genius for space-form relationships. A timeless, an almost or quite classic, quality pervades these. Abandoning the symmetry of former periods, he took architectural form a step further. Like Schoenberg, like Stravinsky, he added the riches of new dissonance never before conceived.

The architecture of Wright,—heavy as some of it still is with ornament, not quite freed from the generation from which he is sprung,—flows part into whole, and part into part, plantlike, organic. It comes strangely alive.

Beside it, much of that work called "modern", and all of that to which the terms "moderne" and "modernistic" apply, is sterile or dead.

"The purpose of construction is to hold things together; architecture, to move us." With these words, le Corbusier acknowledges the essential emotive quality which makes a building come alive. In much recent work, the form fails to move us; it is purely functional, nothing more. But there is a quality inherent in the architecture of greatest of the moderns, which adds to the functional principle that essential difference between the mechanism and the organism. There is a living relationship between space and space, the three-dimensional plenum. The pure functionalist, operating in terms of reason alone, brings forth something less rich in feeling content, empty of that essence which distinguishes the work of art from the merely competent solution of a problem.

In our country Wright, and in Europe Mies van der Rohe, le Corbusier, have in some way been able to communicate something of this essential intangible to the creative individuals of the newer generation in architecture. In our time it is increasingly to be seen and felt as a pervading quality. Like the elements of "dynamic symmetry", it is doubtless reducible to reason; it has a mathematic, a logos, of its own. And like the piercing quality of sunlight, it is more difficult to communicate in words than to experience directly.

This intangible is some sort of an architectural vitamin. It is that quality or function which distinguishes the machine from the living organism.

THERE is a good deal of very natural confusion at this point in the development of contemporary architecture, among those who have not quite put salt on the tail of this intangible.

Many of them are traditionalists at heart, reluctantly persuaded, recalcitrant in the realm of feeling; "trying" to be "modern" without the urge of a driving subjective necessity.

It is unfortunate for such temperaments to essay this transition. They work best in the time-period to which their own nature responds. And there is still need of them.

Further confusion has resulted from the cluttering of the streets of cities with facile, stylistic, and insincere, perversions of the basically modern in architecture. The brilliant early work of the movement in Europe, as well as of Wright and his school in the United States, was promptly followed by a stream of pseudo-modern imitations. They were, however, related to the essential bases of this work, about as are the syllables of a parrot to the utterance of a creative thinker. It is unfortunate that style is a thing so easy to imitate. Style was never an objective in the movement; it was merely a resultant, a bi-product.

NEVERTHELESS, although a high degree of awareness of the new form-vocabulary and its three-dimensional riches, is desirable in the creators of an architecture suitable to our time, its problems can be met upon a purely functional basis. If he begins with the social data which dictate his floor-plan, each item will fall logically into its place, the design creates itself as though spontaneously out of its own rationale. If he maintains complete functional integrity, avoids all pitfalls of arbitrary "effect", restrains himself from premature consideration of how the thing will LOOK, it will in the end be at least logical, honest.

Its very honesty will give it an aspect of clarity. And the eye will have pleasure in its integrity. That added pleasure in a form which has been allowed time on the drafting board to come alive, to make the transition from the mechanical to the organic, depends of course upon the seminal genius of the architect.

NOT merely physical necessity, but new social attitudes, require a new architecture. The development of a machine civilization, the perfecting of new and synthetic building materials, the multiplication of devices for efficiency in the mechanics of living,—these all serve and help to make possible a new type of building.

But there is in addition to these, a social reason for change. The desire to live simply and sunnily, to relate indoor more intimately with out-of-door living; the release of civilized men from the claustrophobia which made the primitive dwelling a fortress against fear,—these constitute a summons to a new architecture and determine its direction.

New social attitudes require a new housing. The spirited younger generation feels discontent in the mansions its fathers have prepared for it.

In order to feel altogether at home, it must build its own.

THAT dwelling is not "modern", because not functional, which lacks the quality of comfort. Clutteredness is not comfort, although the individual with an inferiority feeling, who is perhaps psychologically unsure of himself, perhaps arrays a multiplicity of possessions about himself, to reassure himself.

As we gain a greater general psychological health, we need fewer and fewer of these bulwarks of self-assurance. We become less and less afraid of bare space; we are, on the contrary, refreshed by it. In a civilization clamorous with sound and riotous with spectacle, the eye seeks gratefully for quiet regions of space uninterrupted by the uninvited and the irrelevant, free of decor. Silence becomes the dearest sound, the sought-for music.

The beauty of parts inter-related within the whole; of colors which have regard for one another; of rightness and suitability of material and texture; these supercede the pleasure other periods took in the single item of beauty, unrelated to others or to any totality, centered in solitude.

The relatedness of all parts, both functionally and spatially, is perhaps what causes, in a fine modern design, that sense of the organic on the part of the beholder. That well-proportioned relatedness results for us in a psychological affect, a feeling of well-being and inner satisfaction.

A deep delight in proportions is not new. The high development of classic Greek civilization was communicated into the proportions of its structures. Yet the Greeks were strangely limited dimensionally. Spengler based the primary hypothesis of his interpretation of the Greek culture upon this two-dimensional limitation of their experience.

We in our time experience dimension differently—a counterpart of our change from Euclidian to Einsteinian mathematics. The three-dimensional thrust in the architecture of our great moderns, is witness of an advance of consciousness beyond that of the Greek culture. It is the proof of our right to a new architectural vocabulary, indeed our need of one.

Our period has found a new language of proportion,—not only in architecture but throughout the arts,—a new form by which to communicate a content not yet thoroughly known. The artist is a man blindly bringing to birth an unforeseen content.

It is peculiarly right that this birth effort should fall to modern architecture to accomplish. For architecture not only speaks a language; it fundamentally conditions social growth, ripening, and change.

—P.G.S.

PATIO, THE G. G. BUCK RESIDENCE
R. M. Schindler, Architect

THE G. G. BUCK RESIDENCE, LOS ANGELES
R. M. Schindler, Architect

RESIDENCE FOR MR. AND MRS. G. G. BUCK, LOS ANGELES
R. M. Schindler, Architect

LIVING ROOM, RESIDENCE FOR MR. AND MRS. W. E. OLIVER, LOS ANGELES
R. M. Schindler, Architect

RESIDENCE: W. E. OLIVER.
ARCHITECT: R. M. SCHINDLER.
LOCATION: THE LOT, FLAT IN THE CENTER, TOPS A RIDGE AND OVERLOOKS SILVER LAKE, LOS ANGELES.
PROGRAM: RESIDENCE FOR A SMALL FAMILY.
LAYOUT: THE BUILDING IS PLACED ON THE HILL-SLOPE SO THAT THE FLAT PORTION OF THE LOT MAY BE USED AS A PATIO. IN ORDER TO PRESERVE THE FOUR IMPORTANT VIEWS PERMANENTLY, THE HOUSE IS PLACED AT AN ANGLE WITH THE LOT LINES. THE GARAGE IS DUG INTO THE HILL, AND PROVIDES A ROOF TERRACE FOR A PLAY-ROOM.
ARCHITECTURAL SCHEME: THE DEED OF THE LOT CALLS FOR A SLOPING ROOF. IT WAS USED TO INCREASE THE CEILING HEIGHT OF THE MAIN PORTION OF THE HOUSE, BUT TO REINFORCE THE SPACE UNITY FOR THESE ROOMS, ALL PARTITIONS ARE MADE OF FRAMELESS GLASS FROM THE DOORHEIGHT UP. THE SAME TREATMENT OF THE OUTER WALLS CONNECTS THE HOUSE WITH THE GARDEN. THE STREET, WHICH IS SEEN AT A DISTANCE. FROM BELOW, THE HILL IS STRONGLY ARTICULATED. THE GARDEN FRONT INSURES A HOMELIKE CHARACTER FOR THE PATIO BY A SMALLER SCALE AND A MORE DELICATE GRAMMAR.
CONSTRUCTION: WOOD FRAME, DUE TO LIMITED BUDGET. THE SAME STUCCO FINISH AND COLOR (TAN-YELLOW) FOR INTERIOR AND EXTERIOR. SLIDING SASH OF CADMIUM PLATED SHEET METAL.

THE OLIVER RESIDENCE
R. M. SCHINDLER, ARCHITECT

Above, patio, looking toward the living room.
Below, looking through the living room to the patio and the lake beyond. Stairway to upper playdeck for the children. The island situation of the lot on the hill makes possible this high degree of openness, without violation of privacy.

Floor plan, and entrance aspect from the roadway below. The Oliver residence.

FURNITURE AND THE MODERN

A THEORY OF INTERIOR DESIGN BY R. M. SCHINDLER

THE contemporary house is not a new variation in style but a radically new conception.

The Interior Decorator who is called upon to furnish a conventional house finds a group of separate box-like rooms which he proceeds to fill with copies of ancient furniture pieces. His working equipment is some sort of a knowledge of the earmarks of the various styles, seasoned by a varying quantity of personal taste. The furniture is bought at a store by the piece or the set. The owner who has the deciding influence selects pieces which seem especially effective on the sales-floor. The design or pattern which can command attention amidst the surroundings of a furniture store is likely to be unfit to join a quiet, harmonious group at home. The average fashionably decorated house therefore repeats the atmosphere of the store, only slightly improved by a more conscious attempt at a color scheme.

In contrast with this, the modern architect who has become the space architect, sees the house as an organism in which every detail, including the furniture, is related to the whole and to the idea which is its source. This eliminates the possibility of selling contemporary interiors across the counter unless present sales techniques be completely revolutionized. The contemporary designer who tries to co-operate with the ordinary furniture producer will fail to achieve thorobred results. Both the interior decorator and the store manager indicate a good grasp of their limitations by declining to handle contemporary work at present. Therefore the field is left entirely to the architect—the space architect.

During our time a new conception of architecture is being born, with an import which far exceeds the startling variations in the other arts. The old saying that "architecture is the mother of the arts" needs restating. Music, poetry and painting use motifs of the period of their birth through which to express their time. Creative architecture cannot stop at this but must visualize the life of the future, and develop a frame to receive it. It does much less express the present than to form the channels through which we may escape from it. The musician may use the shrillness and the speed of our transition period to enrich his moods and his language. The architect must steer us away from unhealthy whirls in our development towards a life which will satisfy our deeper instincts as human beings. And the house, like any personality, finds its fulfillment not in efficiency, practicability, structural obviousness, or stylistic loyalty alone but in achieving "charm."

SPACE ARCHITECTURE

The architect of the past saw the building as a mass of structural material which he carved. His medium of expression was the same as the sculptor's; mass form.

The architect of our time is discovering a new medium; space. The house of the future is a symphony of "space forms"—each room a necessary and unavoidable part of the whole. Structural materials, walls, ceilings, floors, are only means to an end: the definition of space forms. They lose their individual importance and are simplified to the utmost—a simple weave of a few materials articulates space into rooms.

Contemporary work is architecturally important only as it enlarges our consciousness of this new medium. Most of the slogans used to praise new work ballyhoo superficial and transitory traits. Functionalists, internationalists, mechanists, are fighters in a literary arena which is apart from the workshop in which a new architecture is being developed.

However, the architect is a new hand at furniture designing, which accounts for many of his recent mistakes. During the period of his initiation, striving strenuously for unity, he tried to make the furniture an integral part of his architectural scheme without sufficient regard for its use. The resulting lines and materials fitted admirably into the setting; but the furniture remained angular and unwieldy. The realization of this defeat threw him into the camp of the mechanist. He called the house a "machine to live in"; the chair a "machine to sit in"; forgetting entirely the basic differences between house and machine.

The essential characteristic of the machine is its capacity for exact repetition—its effort is one-dimensional. Yet the essence of life is variation. In direct contrast with the limited power of a machine. The house which helps articulate us must allow further variation. It must be four-dimensional.

The machine is merely our tool for production and our wonder at its achievement hardly justifies our taking it into the parlor. The sloganist who in an industrial era preaches "living in a factory" repeats the period of the primitive agriculturist who took the livestock (his production machines) into the livingroom.

The "functionalist's" attitude towards form is as primitive as is the mechanist's attitude towards life. He overlooks the fact that the structure of our machine is still infantile. It has remained a loose conglomeration of working parts and has not yet grown to become an organism. Respect for the achievement of the engineer should not induce us to substitute his form-stuttering for a fully developed form-language. The "functionalist's" chair usually remains a "contraption to sit in", on a level with the products of the nursery; combinations of pieces of wood, metal and string obviously fastened together by the little boy who likes to putter around.

Furniture cannot be designed according to such one-sided slogans. Its matured form is the result of many complex forces to which the architect must submit and which he must keep in proper relations. Unless eggs, sugar and flour have merged to become untraceable in the whole, the combination is not yet a cake.

The architect should not be blinded by temporary constantly changing products of inventiveness. His task leads beyond his own period: the creating and framing of a more human life by means of his new medium—space.

NATIONAL CHARACTER

If we speak of civilization, we mean that part of human enterprise which in sheer self-defense struggles to mold human surroundings to respond to its needs. Whereas the animal is satisfied to meet the hardships of the outer world by a slow biological process of adaptation, the human mind carried the conflict into the enemy's territory by boldly civilizing it. The only point of view from which such civilisatory efforts can be judged is a pragmatic one. Their application is international. They may be reproduced and reused endlessly as long as their purpose is in demand.

This is in direct contrast with all traits of culture. The problems of culture are the problems of growth and development of the human being himself. Its products are

the result of self-realization. Dealing with personality (individual or group) they are unique phenomena of historical meaning. They are connected with a definite period of human development, not subject to conscious will. As the constellation at their source can occur only once, a repetition or recurrence of historial phenomnea is impossible.

This gives the essential difference between the product of the engineer and that of the architect. The former's intent is entirely civilisatory, whereas the architect is both the child and the creator of a culture. His source is the life character of a group, nationally, racially, or locally defined, a source emitting a subtle unconscious influence to which he is forced to submit.

As a mere product of the civilisatory urge, all shoes might be alike. Compare, however, the shoe of Japan with our western one. The former is a geometrically shaped sole, which is actively held in place by the toes. It is related to the form of the foot only by its size. It may be understood as a piece of the floor covering lifted out and carried along for protection.

The western shoe, on the other hand, adapts itself closely to the human foot. It tends to become a layer of an artificial skin, following the foot's motion with the same pliability as the natural skin. Its shape is a dynamic conventionalisation of the human foot, not comprehensible through abstract geometric formulae. The significance of this difference becomes clear if you can follow its traces, or similar ones, through all the products of the human mind.

Compare the stiff, concealing Japanese "obi" with the flowing European sash, the eastern head support of wood or porcelain with the western pillow of eiderdown, and you will see the application of this realization to furniture design. Although furniture may have civilisatory use, in its ripe form it has undoubted cultural meaning. All thoroughbred western furniture will show dynamic conventionalisations of biological parent forms. And this is the real reason why we had to abandon the early stiff architectural designs of Frank Lloyd Wright and others—their unpractical unwieldiness being only a superficial excuse for the switch towards the "Functionalist."

THE FLOOR

One of the important forces which subconsciously affect our furniture designs is supplied by the floor. Our conception of the significance of the floor changes with time and locality, and our furniture follows the development.

Historically there are two separate arche types of houses and consequently two distinct meanings of the house floor.

The one originates with the idea of the tent, the igloo, etc. Its essence is mobility and its scheme based on the idea of a sheltered bed rather than a house. Consequently its floor is contrasted with the ground outside. It is covered with textiles, and serves as a place to lie and sit upon directly. The need for mobility was first during the period of nomadic life, and became obsolete as soon as agriculture settled locally. That is the reason why the tent never reached a very high stage of development except in one country, Japan. Here the constant earthquake danger enforced a specification for house building which is akin to the one of the nomad—lightness, flexibility, ease of rebuilding. The Japanese house shows us the tent in its mature development. Its idea and origin explains why the Japanese divests himself of his shoes on the threshold, why he sits and lies on the floor, eliminating a necessity for furniture.

The second ground type of the house has the "cave" as its mother. It is static, permanent, and protects not only the bed but all of life's actions. The floor is understood to be part and continuation of the ground outside. Close contact with its roughness is objectionable and this leads to the invention of furniture: instruments to suspend the body and its attributes some distance above the floor. Instead of placing primary emphasis on textiles, this floor conception forms an incentive for inventing hard floor finishes, pavings, tiles, etc.

The urge to refine finally includes the out-of-doors. It submerges drainage and sewage below the street level. It leaves the way open for our present wish to join the indoors with the out-of-doors and to make garden and house one.

This battle to civilize the floor and remove its objectionable characteristics again reacts on our furniture design. Contemporary pieces lose the excessive height of the historical products—medieval chairs, etc.—and tend to bring us closer to the floor, until in recent years we are able to sit again on low pillows without losing social caste.

SYNTAX

The artist's meaning is conveyed through the articulation of his medium—a language. It is subject to a grammar, similar to our vocal language and becomes understandable only to persons who are sensitive to relationships established amongst the elements of its vocabulary. The furniture designer has the following possibilities of form relationships at his disposal:

1. Repetition.

The most primitive relationship is numerical, the one of the row. Its possibilities range from the monotone to the tremor of the broken line.

2. Style.

Style is achieved by a similarity of form-vocabulary and form-feeling in all units which may remain separate entities. It is the main tool for harmony of the interior decorator, whose lack of real kinship for past styles reduces his language to stammering a few form words out of the period he imitates.

3. Form Continuity.

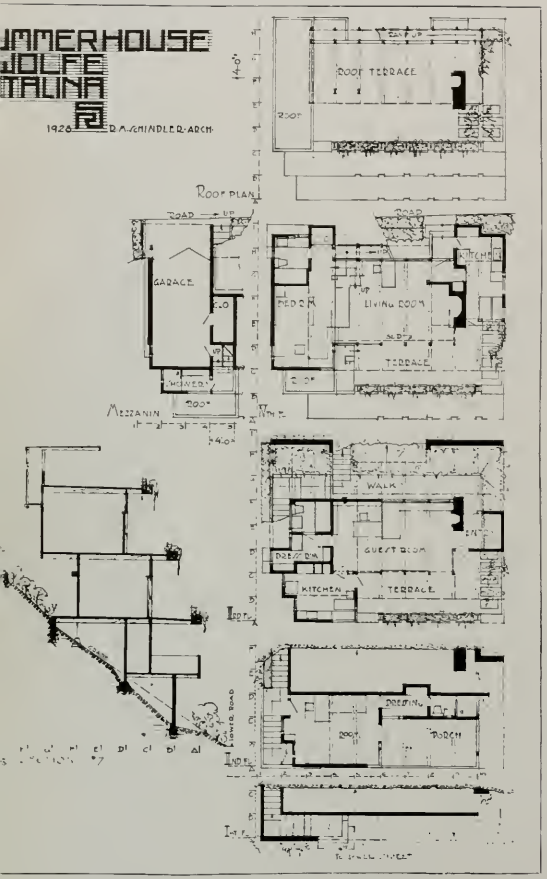
The various units are joined into one form-scheme of higher order through continuity. The artist uses this means of forging his details into an organism. The average interior decorator stops at the arranging of "groups" as closely connected as his imagination allows. Each room contains several such groups (mantel, candlesticks, picture, etc.) which are re-used endlessly and with slight variation. They make good photographs for publication purposes, but fail utterly to establish organic unity in the room.

4. Space Definition.

The new contribution of the space architect and the style-forming force in all contemporary work is space definition. The furnishings thus mold the space-form of the room. The period styles attempt at a convex-plastic form expression. All efforts to modernize such design through the use of futuristic, modernistique form elements are therefore a contradiction of the essential element.

Furnishings lose more and more the character of convex-plastic individual pieces which clutter up the room. They merge instead with the house, leaving the room free to express its form.

This series of articles on the principles and problems of furniture design, will be continued in the January issue of **The Architect and Engineer** with a discussion by Schindler of The Contemporary House. Its Composition and Scale; on Furniture and Posture; on the Organization of the Room; and on Lighting.



Built in four receding layers upon a steep hill slope, the house is rooted into the hill without excavation. The rooms, with their seaward orientation, open upon garden terraces.

THE WOLFE SEA-EDGE HOUSE AT CATALINA ISL
R. M. SCHINDLER, ARCHITE

ROOF TERRACE AND UPPER ENTRANCE FROM THE ROAD. THE WOLFE SEA-EDGE HOUSE, CATALINA ISLAND
R. M. Schindler, Architect

THE RING PLAN SCHOOL. A PROJECT. by Richard J. Neutra, A. I. A.

For the traditional listening school, classrooms with four substantial walls, floors, ceiling, windows, and some provision for heat, light, and air are sufficient. In these schools the teacher does the thinking, planning and initiating, while children sit passively accumulating information about the world in which they live.

In the modern active school, children learn not alone through reading about what others have done, but by doing also.

What adult could not learn in the classroom the facts about driving an automobile and pass 100 per cent on examination? Having thus "learned" who would voluntarily drive an auto for the first time down one of the busy thoroughfares of today? The case is identical with the procedure of the listening-inactive school. True education is not teaching **about** doing things. It is **doing** things that facilitates child learning. School buildings planned for places to acquire facts through motionless receptivity defy every effort of administrators and teachers to meet present demands of progressive educational practices.

The three R's school building was not meant to be used as a miniature community. Yet we have done little to adapt it to our changed social and educational needs. Progress in school planning has been chiefly along the lines of architectural beauty and structure and improved sanitation and decoration.

The traditional floor plan of the classroom with adjoining cloak hall prevails. In this inadequate setting teacher and children, to keep abreast of modern thought and to meet its insistent demands, are called upon to overcome almost insurmountable difficulties. The removal of the difficulties and the provision of a school environment adapted to progressive educational methods entails no more than an enlightened point of view on the part of architects and others in charge of school planning.

A REVISION OF THE CONCEPT OF THE SCHOOL BUILDING

A NEW PLAN FOR CALIFORNIA SCHOOLS

RICHARD J. NEUTRA, A.I.A.

The earthquake of 1933 which revealed the structural obsolescence of various types of buildings, also presented the urgent necessity of redesigning the school plants in the Los Angeles City School District. Such a situation following a catsatrophic event as in the case of the London fire in the seventeenth century, the New York conflagration at the beginning of the nineteenth, the Chicago disaster of the seventies, or the Japanese earthquake of a dozen years ago, offers not only a pressing obligation, but also a great opportunity. In all these cases the rebuilding was not only an attempt to eliminate future danger of similar damage by the introduction of new structural security, but an up-to-date adaptation of the planning to new modes of use and function, which had arisen previous to the disaster, but only now developed a possibility of material realization by a rejuvenated building activity. Thanks to these ill-fated occurrences, London became not only more fire proof, but an example of city planning to Continental Europe; New York overtook her old rival, Philadelphia; Chicago, with her first American city plan, her famous park belt and water front projects, earned the admiration of other cities on both sides of the Atlantic.

The principles of elementary education commonly accepted today call for a new and more flexible type of plant, which in its deviations from the traditional one requires experimental planning conservatively rechecked, and based on careful discussion with the managerial forces of the contemporary public school, with experts in curricular design, with teachers actively engaged in modern classroom procedures, with experts in physical training, illumination, hygiene, sanitation, structural engineering, landscaping, school furnishing.

The school plan shown establishes a one-story structure for twenty-five classrooms, including kindergarten; auditorium; administration offices; dispensary; lunch room; and physical training grounds. School corridors and stairways are economically eliminated. Great emphasis is laid on the intimate relation of interior and exterior spaces.

Each interior classroom is practically duplicated in floor area by an outdoor classroom, into which it opens by means of a wide glass door sliding under a roof over-hang. Each classroom is further equipped with a two compartment work and storage space where the materials are handled which play such a significant role in the activity curriculum. There is light influx provided for in a manner that makes the grouping of children independent of a strictly one sided fenestration, and does away with the necessity for fixed seating arrangement, which interferes with any satisfactory unit of experience training.

Through this modern method, academic subjects are taught in close relation to the structural projects of the pupils, which often tend to extend the activity into the out-of-doors. The provision of a patio for such work unburdens the floor area of the room.

Fire risk for the children is practically nil, on account of free exits to the outside grounds. Earthquake risks are minimized by the one story character of the classroom wings, without any heavy superstructure, bulky roof, or attached dead loads.

THE CORONA AVENUE PUBLIC SCHOOL, LOS ANGELES
RICHARD J. NEUTRA, ARCHITECT

This building is in accord with advanced principles of education, long hindered by the old-type classroom. It is undertaken as an experiment by the Los Angeles Board of Education, and looked upon with high interest by Boards in other cities, with heavy building programs to carry out. Clean lines, economy of cost, and safety against earthquakes, are afforded by the building. Simplicity and frankness of structure supercede the monumentality of other periods.

THE CORONA AVENUE PUBLIC SCHOOL, LOS ANGELES
RICHARD J. NEUTRA, ARCHITECT

Each class-room opens out upon its own patio, a space for play, for class-room project activities, for the construction of miniature towns and historic models. A large part of the school life can thus be spent out of doors, and all of it is freed from the cramping influences of nailed-down desks and chairs in the typical school room of the old order reached by long corridors.

THE N. KOBLICK RESIDENCE, ATHERTON. RICHARD NEUTRA, ARCHITECT

OBLEMS OF PRE-FABRICATION

Richard J. Neutra A. I. A.

WILL the trade in that dwelling commodity, called livable house, be taken away from contractors? Will architects stop designing it?

Pre-fabrication discredits old practices; it seems to make some clean-cut, sound promises. Why then is it slow in succeeding?

Technologically, not only promises, but numerous solutions, are at hand. Full shop-fabrication appears in many ways almost ready to reduce the building-site to a short-term assembling yard.

Psychologically, the matter is not sufficiently solved to secure financial backing for the industrially fabricated house; and piecemeal financial underpinning does not help much. Possibly it does harm in demonstrating half-raw results.

Industrial pre-fabrication of habitation is being announced by enthusiasts as today's great chance for capital investment and delectable returns. Why does not capital grasp this chance? Answer: There is no way known to ascertain whether a quantity acceptance will exist, when the market opens.

Is acceptance not insured if we offer:

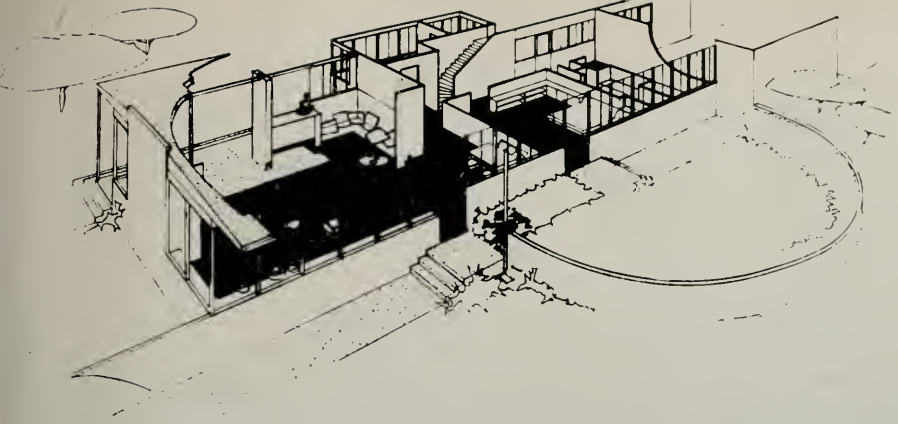
Low cost?

Smooth functioning of displaced equipment?

Quality with durability and low upkeep for a definite term of amortization?

Will not the pre-fabricated "house of the future" indeed offer this? And who could resist such an offer?

Well, the house of the future rises beyond a period of transient experimentation which so far, however, no experienced capitalist group wishes to finance. Low cost, smooth functioning, timed durability, and quality, are the by-product of a carefully modelled and perhaps yearly remodeled quantity production. It requires an expensive and definitely directed laboratory research in the co-ordination and integration of many elements. The problem is one of neatly joining all the parts to a consistent and combined performance, that will convince. Just what constitutes a livable environment at this historical moment becomes an issue of a high-priced campaign of convincing. To pay for the maintenance of laboratories, test executions, high-grade research-workers' salaries, may spell bankruptcy if sales on a large scale cannot soon be induced. Quantity sales cannot be secured except by a costly nation-wide advertising program. This again is senseless before the machinery set-up for production is at hand, so that orders can immediately be answered with deliveries. It looks like a vicious circle.



Big finance returns to the crucial question: Can pre-fabricated houses be sold in ten thousand lots, if only in such quantity can they be distributed at reasonable price and superior quality? No big manufacturer in the United States has, for example, yet succeeded in standardizing inter-city busses so that a machinery set-up for light all-metal frames has proven justified. This is characteristic, and speaks through analogy.

The first motor-car models were developed by tinkering little mechanics, not by strong companies; and they were scarcely in conflict with accepted mass standards. The grandparents of most car owners of today had no private vehicles of transportation, and had no relation to the problem.

The well-integrated, standardized, pre-fabricated, assembled house is in conflict with mass prejudices, which have first to be dissolved. Obliging concessions to individualistic formal diversification threaten the manufacturer with economic failure. Model-consciousness would have to be created in consumers, as has been done in the automotive field. The hand-made house cannot be camouflaged, without losing prefabrication advantages. His heart-breaking small-scale efforts pave the way to an increasing confidence on the part of an increasing fraction of consumers. Each of his exemplary executions which, while individually put up easily prove themselves adaptable to series fabrication, gains the interest of manufacturers in neighboring fields of production. Each publicity success of his work brings the hesitant capitalist a step closer toward financing this experiment.

Recognizing many years ago the factors described above we have faithfully endeavored to give many individual jobs entrusted to us a character which would easily lend itself to series production. We further attempted to introduce meritorious materials in which strongly intrenched manufacturing interests are invested. This is opening a vista on new markets for steel, diatom, asphalt, etc.

We have combed the housing field to demonstrate the advantages of typification, wherever least prejudice resists it. Standardization of the elementary school, of the drive-in retail market, of the highway auto court and restaurant, the vacation cabin, municipal beach resorts, gasoline stations, has been attempted. A special study has been carried out to attack with the practice of prefabrication such dwelling problems which ordinarily offer difficulties in field construction: distance from sources of supply of skilled labor and construction equipment; unwillingness of lending institutions to give financial support or to take risk on thus handicapped projects. A principal case of this last sort is the hillside home to be erected on slopes of more than twenty degrees.

On the whole, we cannot doubt that a program of elimination of most of the field work and transforming the premises into a local assembling yard has gained ground in the United States. But I am fairly satisfied that there is left a significant role in this performance for the individual architect-engineer, within the limits of a period which marks the transition from field to industrialized shop work in the production of the human dwelling for the many.

I expect that the professionally skilled, conscientious planning expert will remain in demand and gain in prestige, while thousands of thoughtless jerry-builders may well find threatening competition in a systematically organized mass-fabrication.

THE BAR

BAR AND COCKTAIL LOUNGE, THE HOTEL SHORELAND, CHICAGO
DESIGNED BY J. R. DAVIDSON

Materials and colors:

Floor covering: Three tones of brown velour carpet.
Walls in cocktail lounge: Pale gold tekko.
Ceilings: Light coral.
Walls in bar-room: Zebra flexwood.
Walls behind bar counter: Stainless steel, glass, and lacquered wood.
Upper part: Light yellow. Entire ceiling, light yellow.
Bar counter: Blue front, black ebonized mahogany tops; stainless steel back.
Canopy over bar: blue.
Seats: plain blue fabricoid.
Tables: Chrome metal base and glossy black formica top.
Lighting, entirely indirect.

FRANCISCO
PUBLIC LIBRARY

BAR AND TAVERN, HOTEL KNICKERBOCKER, CHICAGO
DESIGNED BY J. R. DAVIDSON, OF LOS ANGELES

Several existing odd rooms were combined for this bar and tavern. The combination of room shapes developed interesting perspectives and corners, which helped to create its atmosphere. Various ceiling levels and columns were designed to conceal existing vent ducts and plumbing pipes.

Materials and colors: the bar:

Ceiling and walls before bar, dark purple-brown. Bar-counter and wall behind it, crimson red lacquer. Ceiling, copper. Niches with shelves and windows, pale yellow. Footrail and counter trim, back bar and apron above counter, all of copper. Lighting, indirect.

Materials and colors: the tavern:

Walls and ceilings, varying shades of grey and tan.

Murals designed and executed by Miss Congdon.

Ceiling fixtures, polished copper. Tables and chairs, dark blue. Table tops, solid mahogany. Chair seats, pigskin.

Floor, accotile in light and dark grey, dark and light blue, dark and light purple-brown.

BED ROOM, THE HOTEL SHORELAND, CHICAGO
DESIGNED BY J. R. DAVIDSON.

Hedrig Blessing

Hedrig-Blessing

THE HOTEL BEDROOM REVISED

Remodelled bedrooms in the Hotel Shoreland, Chicago. Designed by J. R. Davidson.

A demand for more condensed quarters in residential hotels has resulted in combining living and sleeping facilities in one room.

The furnishings of these single rooms, planned originally for bedrooms only, were too valuable and well-constructed to be replaced entirely by new pieces.

In the room shown, the highboy, easy chair, and desk chairs were remodelled. The studio couch utilizes existing box spring and mattress. Cover and slipcover for pillows to match, are especially tailored. Book and radiator cover are new but very simple in design. Desk is especially designed, with top of black Formica.

These and other model rooms were repeated, each through the same respective riser in the building, where the floor plans are identical. Variation was obtained with differences in colors, in accessories, in hardware, and other detail.

THE SHOP

THE BACHELORS' HABERDASHERY, WILSHIRE BLVD., LOS ANGELES
DESIGNED BY J. R. DAVIDSON
Zebra wood panelling. Rug designed in relation to the floor plan of furniture arrangement. Smooth sleek technique with roughish masculine textures for upholstery.

THE RESTAURANT

DESIGNED BY J. R. DAVIDSON

Exterior: of stone in warm tones of tan and salmon.

Interior: burnished copper ceiling and trim with indirect lighting.

Within the next hundred years a great deal of building is going to happen. Its nature and quality is being determined now in the schools of architecture. The lives of our children and grandchildren will be decisively conditioned by the youths who now sit before their drafting boards in these schools, evolving their first architectural concepts.

In Germany, the Bauhaus at Dessau, had, until Hitler, a healthy energizing influence upon European building. The very structure in which the school was housed, was a stimulant to fresh thinking.

This is now, however, banished, as is the flat roof from German residence design. There is supposed to be something subversive about the flat roof; the sloping covering has been ordered back.

Certain individuals in Europe have decisively influenced the modern movement in its early period,—Van der Rohe; Oud in Holland; le Corbusier, now lecturing in the United States. In Wisconsin, in our own country, the Taliesin Fellowship, on the hundred-acre estate of Frank Lloyd Wright, is a school of forty or so students. Under the stimulus of the personality of Wright, these students work in an atmosphere of practical idealism and imaginative freedom. Their recent group product, the major city plan shown at Rockefeller Center, was a witness to the liveliness and breadth of their work.

University schools of architecture suffer from the cramping limitations of political expediency. The beaux-arts tradition may not be waived. An "objective" mingling of "modernism" with tradition brings about confused results. The modern spirit is a revolutionary one and cramped in the presence of the aunts and the uncles.

Too often the members of the university staff are themselves so seasoned in old ways of thinking that they fail to experience within themselves the essential life feeling which makes necessary a basically new architecture. There is therefore a nostalgic staleness about their teaching concerning "modernism", which is to them an alien, sterile, superficial, and perhaps annoying temporary phenomenon.

On the Pacific Coast an effort has been made in one of the university schools of architecture to develop a graduate school under the leadership of Neutra. If eventually this reaches fulfilment, an important step will have been taken. For there is a constant stream of young men coming to these creative leaders in the modern movement, asking for an opportunity to develop in the atmosphere of their studios.

In the schools devoted to the plastic and graphic arts, courses in architecture have necessarily crept in. In some of them, such as the Chouinard School in Los Angeles, the Rudolph Schaeffer School of Design in San Francisco, there is the sort of teaching which provides an approach to modern feeling in three dimensions. Indeed, a three-dimensional form-aesthetic, combined with an intelligent understanding of the social forces converging in our time toward change, are ideal prerequisites for the study of architecture.

The signature of such a teacher as Rudolph Schaeffer can be seen again and again throughout the city of San Francisco. A cafeteria, a shop window, a great department store, designed by himself or his students, communicate his own developing space-sense, and influence the taste of a city.

So in the south also, the influence of certain creators affects general tendency. It is markedly evident that in the last few years mushroom pseudo-modernism is being overcome; the new modern work going up is not shockingly bad as it was before 1929. Some of it is startlingly good. A far higher level has been attained there at last, the result of the patient agonizing struggles of the original few.

Go through the city, and in addition to the works of these "standard" moderns shown in this issue, you will find an apartment house, a group of residence studios, a small house, compelling scrutiny. Some of them good; some of them not quite yet good,—but increasing in integrity, beauty, in three-dimensional organization, in general excellence.

THE HENRY COWELL RESIDENC
Forest Hills, San Francisc
MORROW & MORROW ARCHITECT

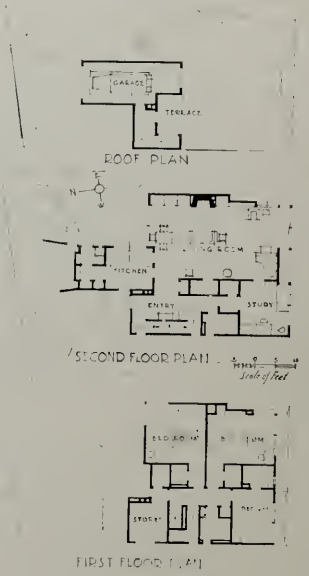
The design of the house was developed from a rigorous solution of highly-detailed living requirements presented by the client. There are four levels, with the garage at the top. The living room is above the bedrooms. The steep slope of the hill made basement excavation unnecessary. Materials and colors:

Exterior wood treated with a bleaching oil on east, south, and western exposures. Yellow creosote stain on the northern surface.

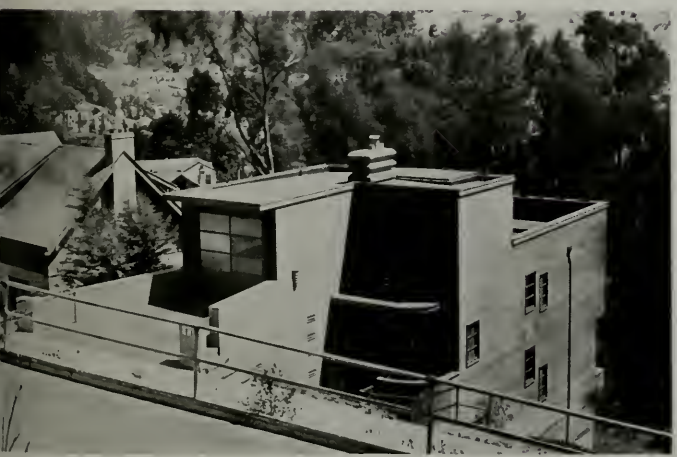
Windows, all steel sash. Living room, natural colored celotex. Floors and wainscot, Philippine mahogany.

Fireplace, turquoise blue tile.

Exterior frame of redwood ship-lap siding, with soffits of overhangs of lemon yellow. Main entrance, blue green. Metal sash, violet.



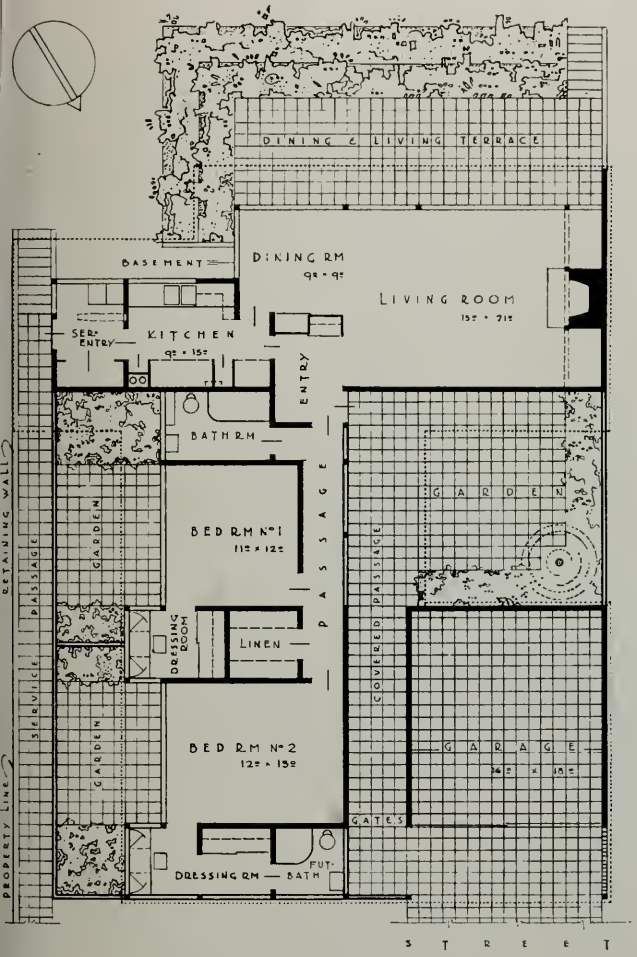
HOUSE FOR HENRY AND OLIVE COWELL
orest Hills, San Francisco
ORROW AND MORROW, ARCHITECTS



THE PAULINE LOWE RESIDENCE IN ALTADENA.
HARWELL H. HARRIS, ARCHITECT

Designed for a forty-foot lot without vista, this little house nevertheless achieves a great deal of out-of-door privacy. The entrance approach is by way of a walk skirting the garage by a covered passage into a quiet garden bit. Each of the two bedrooms opens upon its own garden space also, the room continuing uninterruptedly into the garden by way of wide sliding doors.

Chinese grass rugs, unpainted celotex, and a series of windows making use of translucent glass-cloth, are materials which help to emphasize its somewhat Japanese simplicity and lightness of design.



FLOOR PLAN, THE PAULINE LOWE RESIDENCE
HARWELL H. HARRIS, ARCHITECT

The floor plan, after achieving honorable mention in a recent "House Beautiful" contest, won honors for a second time only shortly later. But not for its originator. A floor plan of basic identity with it, descriptive accompaniment and all, was submitted by two Chicago architects in the General Electric competition, and won a prize of $2,500.

Delicate questions of plagiarism arose and remain unanswered. The idea that an excellent architectural solution should become the property of society,—a parallel to the socialization of medical knowledge,—was not questioned. But whether a prize for a solution by one architect, should be received by another who adopts it in toto, is a question of professional morality.

DINING PATIO, THE HOUSE OF PROFESSOR GRAHAM LAING, PASADENA. HARWELL H. HARRIS, ARCHITECT

THE FIREPLACE

Fred Dapprich

REPLACE DETAIL, THE PAULINE
VE RESIDENCE. HARWELL H. HARRIS, ARCHITECT

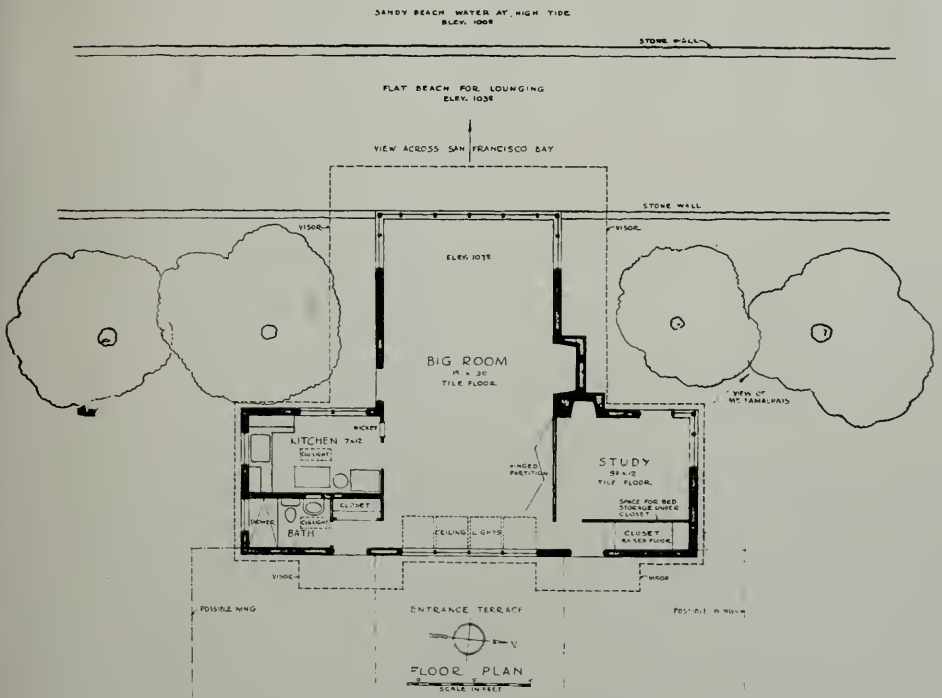
FIREPLACE DETAIL, THE GRAHAM LAING RESIDENCE.
HARWELL H. HARRIS, ARCHITECT

Roger Sturtevant

A BEACH HOUSE FOR MR. AND MRS. ROBERT SHAW, POINT RICHMOND. WILLIAM WURSTER, ARCHITECT

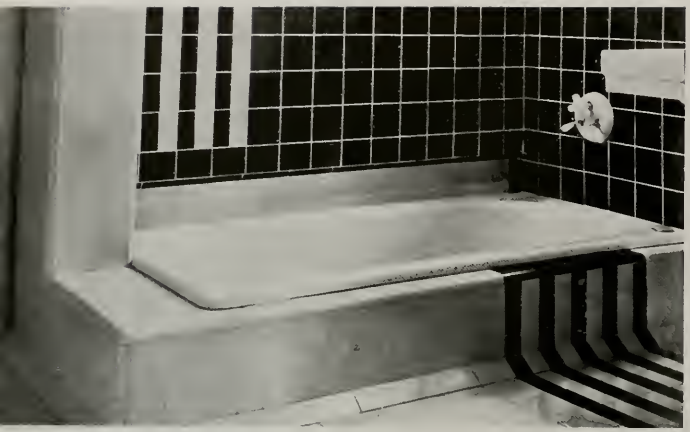
This house shares with the Kauns', shown on preceding pages, the sandy cove and eucalyptus grove facing San Francisco Bay. Also of minimum cost, it has utilized a beautiful new structural material, an aggregate of warm sand-color, which, reinforced by steel, provides inner and outer walls of the structure and needs no further surfacing or color treatment.

LIVING ROOM, SHAW BEACH COTTAGE, POINT RICHMOND. WILLIAM WURSTER, ARCHITECT



A HOUSE FOR MR. & MRS. ROBERT SHAW
RICHMOND SHORE CALIFORNIA
JUNE 4, 1935

WILLIAM WILSON WURSTER
ARCHITECT
H.L. VAUGHAN - LANDSCAPE ARCHITECT



Brett Weston

A BATH BY R. M. SCHINDLER
Integration of the part with the whole.

The mere replacement of new equipment for old, does not constitute a full realization of the possibilities of the kitchen. Like the bath, it has made a long evolutionary struggle. Having made a successful transition from scullery to place of sunlight-cleanliness, and efficiency, it is ready for the next developmental step; the arrangement of its separate units into a composition of organic integration. No form separate and unrelated to the others; all of them realized as parts of a unified whole.
The substitution of handsome or picturesque units cannot take the place of such organization. Once light and order and functional adequacy are achieved, the form-relatedness of parts is what constitutes beauty in a kitchen.

A KITCHEN BY RICHARD NEUTRA

A STUDIO RESIDENCE FOR EDGAR D. TAYLOR, BERKELEY.
MICHAEL GOODMAN, ARCHITECT. JOHN FINN, CONSULTING CHEMIST.

INTERIOR,
EDGAR D. TAYLOR STUDIO.
MICHAEL GOODMAN, ARCHITECT.

THE OWNER: an artist, desired a house of minimum necessity, with simplest possible upkeep, and possible omission of plaster and wall paint. One large room desired, with much wall space. Hence windows are few, but with light evenly distributed.

ORIENTATION: Hardly any view, and windy exposure from the west. Hence economical place ment of windows and ventrolite window to control the prevailing wind. Left extremely small.

CONSTRUCTION: Chemically weather-proofed whitepine plywood veneer $\frac{5}{8}$" thick, nailed over building paper to earthquake-resisting wood frame with wood joist floors. On the inside, white pine plywood $\frac{1}{4}$" thick, nailed over studs. Bracing value thus afforded is very great.

INSULATION: was found unnecessary, because heat loss resistance of this well is equivalent to that of a wall with 4 inches of solid siding, or 24 inches of brick.

EXTERIOR FINISH: Chemical treatment of exterior walls and doors to preserve the natural color and grain of the wood. Trim, redwood. Basement, cement finish. Shingles painted. Roof decks finished with tar and gravel.

COST: Including hot air furnaces, refrigerator, stove, gardening, and concrete flower boxes $3700.

HOUSING FOR THE MIGRANT WORKER

Lange-Resettlement Administration

IN CALIFORNIA there are over a hundred and fifty thousand human beings who live on wheels. They are the migrant agricultural laborers, their wives, and children,—upon whose work seasonal agriculture in California depends for the harvesting of its crops.

They have no fixed homes. They must move wherever the crops call for them. Beets, peas, lettuce, melons, walnuts, oranges,—these all have their season. A month, six weeks, three months perhaps. When the fruit is ready, pickers may be needed in hundreds, in thousands. An army of them arrives,—from nowhere?—on wheels; camps by the roadsides or in the river bottoms; and when the picking is over, disappears. Where?

Something on wheels is all they have of home; a mobile dwelling, which serves on the way to the job, and on the job itself.

The expansion of California agriculture on an industrialized basis and a vast scale, thus opens the first chapter in the demand for mobile housing in quantity.

The Rural Resettlement Administration has very logically undertaken the job of solving at least the most urgent social problems arising from the homelessness of this large group of the population. In California it has built, and administers, two camps for migrant workers. They are sanitary units primarily. They provide a supervised camping ground, where workers' own tents and their varied vehicles are arranged in orderly street-like rows. Bathing and laundry facilities are provided, and a modicum of physical decency thus becomes possible.

Marysville, California, calls itself on Chamber of Commerce posters "the peach bowl of the world," and requires every year during the peach-picking season an army of four thousand workers in addition to its own normal population. Here the first camp for migrant workers was recently opened with due pomp and ceremony, by the Rural Rehabilitation Division of the Resettlement Administration.

A felicitious choice of a camp director has established there an atmosphere of general neighborly goodwill, a beneficent change from the inescapable squalor of the squatters' camps which had originally arisen on the very same ground, and about which this camp was built at the height of the season. High point of the dedication exercises

occurred when a conflagration consumed, while the spectators cheered, the two wooden outhouses which had provided the total sanitary equipment for eleven hundred campers.

Unless, or until, the owners of orchards and farms provide adequate camp facilities for these seasonal workers, state, county, or federal housing of some at least minimal sort must be provided.

Tugwell, on his recent visit to the Pacific coast, approved the general program of the Resettlement Administration to build from fifteen to twenty such camps in agricultural and seasonal industrial regions. Sanitary units, tent platforms, and sterilizing plants, are included in the program for these. The first two camps built have been relatively experimental as to planning,—organic design, and the skillful solution of the problems arising in this new social-architectural organism, have still to be developed. Three preliminary conferences on Housing for Migrant Workers in California have been held, with Hugh Pomeroy as chairman and the Resettlement Administration sponsors. Reports on the preliminary social survey by Professor Paul Taylor, have been discussed; problems and objections to a program of housing for migrant workers considered; and a general psychological readiness for the undertaking of this responsibility by the Resettlement Administration, developed.

A next step is the perfecting of the basic plans for these camps.

But in addition to these, there are part-time farm-homes to be planned. The initial program calls for the building of 400, in numbers of four or five or six or so to a given region. They are not to be highly standardized; individuation and adaptation to the environment are a part of the intention. The home designs will therefore vary, no two alike. Placed with reference to available employment on farms and industries, their purpose is to stabilize the lives of migratory workers, and those of the 37,000 children in California who are a part of the problem. They will substitute for a squalid squatter situation, the possibility for workers and their families to integrate with community life. Architects of social imagination are now called upon for the solution of the problems of design, within limits of minimal expenditure, for these homes. Pre-fabrication of utility units will doubtless play a part. But we are fortunate in the open-mindedness of the Resettlement Administration, and in its desire to relate these homes to the landscape and the general social environment, and to the individuals who will occupy them and become their eventual owners. Adobe in New Mexico? Pre-fabricated walls of synthetic materials for California? Each locale requires its own solution. It is not to be sought on a mass-production basis.

Lange-Resettlement Administration

MOBILE HOUSING CALIFORNIA 1935

But beyond this, lies another question. What of mobile housing? Is not this situation of 150,000 human beings on wheels perhaps one requiring the perfection of some sort of a mobile habitation also? Trucks, trailers, and battered improvisations on wheels now house this huge army of the road. Occasionally a horse provides the motor energy,—he can browse tax-free.

From the early gypsy-wagon to the first all-metal stream-lined trailer, complete with efficiently equipped kitchen and sleeping quarters; electrically lighted by connection with the motor battery; ventilated, cushioned, and cupboarded,—a long step.

Luxurious trailers have already reached a high level of design in the west. Airplane engineering and stream-lining, following close upon the earlier concepts of mobile housing as put forth in New York by Buckminster Fuller, have resulted in the achievement of a beautiful and compact little dwelling on wheels.

The house on wheels to be designed for the migrant worker and his family will of course differ from this. Social questions will be added to the original problems of economy and efficiency. Shall the house-on-wheels for the migrant worker open out, with folding doors and the possibility of additional rooms for periods when the car is at rest for a longish period? A more general consideration of the design of mobile housing is called for.

A conference on the subject, summoned by the Resettlement Administration, and bringing together architects, engineers, social experts, and those who know intimately the plight of the migrant worker, would come not at all amiss, and might initiate an important new chapter in the history of architectural design and of social planning.

Lange-Resettlement Administration

MODERN ARCHITECTURE AND COMMON SENSE.

By IRVING F. MORROW, ARCHITECT.

What follows is not an orderly exposition of modern architecture. It is merely a discussion, in the light of common sense, of certain objections which have become part of the stock in trade of critics of modern achitecture.

Innovation in Architecture Is Presumptuous.—If this view had maintained from the beginning, there never would have been any precedents. All traditions started as innovations.

Modern Architecture Is Not Beautiful.—Those who discuss aesthetic matters like to believe that beauty is something transcendent and immutable. Reduced to lowest terms, argument on the subject generally amounts to this—beauty is what the speaker likes, and he likes it because he is familiar with it. No objective definition of beauty is possible.

Modern architecture can readily be shown to be bad if you confine your consideration to the bad examples —which is equally true of any other style. Nobody with a modicum of critical faculty would assert that all examples of any style are either good or bad. An opinion which is founded on the abandonment of discrimination is a prejudice.

No movement can be judged on the showing of isolated examples or personalities. Advocates and detractors alike have shown a surprising disposition, for instance, to assume that modern architecture stands or falls, as the case may be, with Le Corbusier. Le Corbusier is a valuable propagandist; but his argumentative temper has won him a prominence entirely unjustified by his ability in the handling of form, which is very mediocre.

Novelty Is Unimportant.—Sometimes yes, and sometimes decidedly no. Each case can be evaluated only on its intrinsic merits. To assume that novelty as such must be pernicious is no less uncritical than to assume that it must be significant. Novelty has at least this important presumption in its favor — if experience proves it to be valid, it has enlarged the resources of the art.

The Reputed Novelties of Modernists Are Not Original After All; Precedents Can Be Found for All of Them.—To disparage a thing because it is at one and the same time novel and derivitive is naive, to say the least.

The implication of this criticism is that modernists will be chagrined to learn that they have ancestors. As a matter of fact, creative designers generally know more about their genealogy that the critics who stumble on recondite relationships.

Modernists Are Merely Charlatans Striving to Shock.—On the contrary, there never has been a time when a greater amount of conscientious effort was applied to the detailed solution of specific problems. Creative designers are interested primarily in appropriateness to current conditions of execution and use. When circumstances point to novelty, they do not fear it; but in the last analysis it is more in the nature of a by-product. The hangers-on may seek surprise for itself. But the hangers-on will always be hanging on to one thing or another—to just what makes little difference.

All Modern Designers Use The Same Features.—To allege in one breath that modernists strive only for novelty, and in the next that they all do the same things is another of the methods devised by the critics for eating their cake and having it.

It is adduced as a weakness that all modernists use flat roofs, "ribbon" and corner windows, pipe rails, projecting shelves and canopies, and so on. It is accepted as entirely natural, however, that all clasisicists use columns, cornices, balusters, modillions, garlands, etc.; that all gothicists use pointed arches, buttresses, label molds, trefoils, quatrefoils, cusps, etc. In other words, the real objection is not to the common use of architectural motives, but to the fact that the vocabulary is unfamiliar, hence irritating. Anybody is entitled to his personal preferences; but the attempt to rationalize prejudices does not inspire confidence in a critic.

Modern Architecture Is Not Human.—Pressed on this point, the critic will add something about human nature never changing—a statement which is supposed to clinch any discussion when argument on its merits fails. What is human to you is what you are sufficiently familiar with to enjoy, and all taste is notoriously changeable. People who from infancy have been conditioned to the conception that only the obsolete is artistic will naturally resent a contemporary expression.

Modernists Are Continually Explaining Their Architecture.—Likewise critics are continually denouncing it. It is true that a work of art is valid only when it is its

(Please turn to Page 64)

Following are condensed descriptions of Helena earthquake photos taken by a staff photographer of Pacific Builder and Engineer:

1—Northeast wing of Helena's new $500,000 high school as it appeared after the major quake of Oct. 31. Note the complete collapse of the wing. Twenty-five employees of West Coast Construction Co., Seattle, general contractors on the building, were in this structure three minutes before it collapsed.

2—Same scene after the major quake of October 18, but prior to the shake of Oct. 31. Many Helena buildings which suffered relatively minor damage on Oct. 18, experienced major damage or total loss on Oct. 31.

3—Illustrating the same "before and after" theme is this picture of the East side Bryant School on Oct. 18.

4—Same school on Oct. 31 showing additional damage.

5—Apartment at Gem and Breckenridge streets. Wood frame, sheeting and brick veneer.

6—Old stone building used as office for Montana State Liquor Warehouse. Face of stone hewn and plastered. Face is backed up with loose stone.

7—Condition of resident hall at County Poor Farm, completely wrecked at 9:47 p.m. Oct. 18. Not one of the old people sleeping in this building was injured.

8—East end of National Guard Armory, Oct. 18.

9—Residence at 1506 Boulder Ave., living room in ruins; wood frame kitchen intact.

10—Old stone warehouse at 1322 Bozeman, used by Montana State Liquor Board. Liquor is being removed on the day following the earthquake. A power shovel demolished the balance of the building.

11—National Biscuit Company warehouse. Masonry construction without any bracing.

12—Chimney at St. John's hospital, Oct. 18. The shake on Oct. 31 caused the hospital itself to be evacuated, the patients being carried to Butte by train.

13—Careful perusal of this picture will reveal that a large truck is all that holds up the roof of the H. Earl Clack & Co. service station on Helena Ave., near the N. P. depot. Frame roof on timber supports.

14—Residence of Dr. W. E. Treise, 628 N. Ewing. No sheeting or bracing.

15—N. P. depot on Oct. 31. Clock stopped at 11:37 a.m., exact time of major termor of that day. Depot is roped off and is not now being used.

16—Damage to parapet walls at Shrine Temple, Oct. 31. View taken on west side of building. East side is in about the same condition.

(Illustrations courtesy Pacific Builder and Engineer)

THE MONTANA EARTHQUAKES

Engineers who visited Helena, Montana, following the series of earthquakes which began October 12 and have continued intermittently are agreed that few if any of the more important structures in the city were designed to resist earth tremors. Like Long Beach and Santa Barbara, the city has had to learn of its structural needs from costly experience. Three of the 1000 or more tremors which Helena has experienced since October 12 were major earthquakes.

The earlier tremors had greatly weakened scores of buildings which later suffered further damage, and even complete collapse. The October 31 quake had a heavy movement for four seconds, followed by lighter movement for 20 seconds. The epicenter was within four miles of Helena, northeast. The intensity was 16% of gravity, dominant period, .2 second.

Possibly the most startling loss was the partial demolition (army engineers estimate the loss at 75%) of a new high school erected last summer at a cost of $475,000.

The construction was termed by H. M. Engle, civil and structural engineer for the Board of Fire Underwriters of the Pacific, as "a modern, fireproof building not yet occupied. . . . The construction was at least average and perhaps better — the wreckage cannot be accounted for by the usual alibi of 'poor construction'. Although it can be attributed to poor design so far as earthquake resistance is concerned, this is hardly a reflection on the designers, since the design was adequate for normal conditions and conformed to general practice in the Helena district. Previous to these shocks Helena has never been recognized as seismically active."

Part of the foundation stood on solid rock, part of it on filled-in material.

Damage to structures of inferior or antiquated construction was of the usual sort and offers nothing new to the structural engineer.

As pointed out by Mr. Engle, structural conditions in Helena were comparatively poor, the majority of mer-

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Commercial Exchange Building, Los Angeles. Picture on left shows building before cut in two; Photo on right shows appearance of building after rejoining the two sections.

13 STORY OFFICE BUILDING CUT IN HALF AND MOVED FIVE FEET

AN ENGINEERING and construction project which has attracted the interest of architects and engineers throughout the country has recently been accomplished in Los Angeles. A thirteen-story office building was literally cut in two and one section moved back five feet to conform with new property lines. The two sections were subsequently rejoined.

The alterations necessary in connection with this building gave the owners a very difficult problem to solve, since Olive street frontage, which was affected by the widening of the street, provided space for three fine offices on each floor, from the second to the thirteenth inclusive; also, a very modern and splendidly equipped corner storeroom, formerly occupied by the Owl Drug Company.

There seemed no alternative to cutting off this end of the building, which would greatly depreciate the value of these offices and storeroom because of the resultant loss of space as well as the demolition of the most valuable store and most desirable corner offices. After careful consideration and investigation, the owners of the building commissioned Walker & Eisen, architects, to draw plans preparatory to cutting off this end of the building. Although many engineers had been consulted, this solution was thought to be the only feasible one, and was about to be carried out, not only at great cost, but with anticipated loss of future rental revenues and considerable inconvenience to tenants, as well as jeopardizing the architectural design of the Eighth street front of the building.

However, before actual work was begun, it was decided to obtain the advice and opinion of George R. Kress, of the Kress House Moving Company, whose experience over a period of twenty years has included many difficult engineering feats similar to this identical problem, in buildings of lesser height. The plan which Mr. Kress suggested to the owners was so convincing for desired results and yet so audacious and revolutionary in operation, that it met with great opposition from many prominent builders and construction engineers.

The plan outlined to the owners was to cut and remove an eight-foot six-inch section of the building at a point about fifty feet east of the Olive street line of the building, where the light court begins, which would reduce in size only two offices on each floor, and shorten the corridor which lay between these offices. The problem was to move the Olive street portion of the thirteen-story building easterly the necessary five feet, thereby allowing the building to comply with the street widening specifications.

It was necessary for Walker & Eisen to draw new plans to meet with this idea of alteration, so that when the building was rejoined, the architectural treatment would be preserved.

The Kress Company's structural engineers, headed by Murray Erick, had to design their part of the work to insure the structural qualities of the building and to design new sub-footings upon which the portion of the building moved, including its own footings, would rest in its new location. A few of the more important problems to be worked out were:

One, the maintenance of that portion of the building moved in a level and plumb position at all times; two, the supporting of the column footings under which the Kress Company excavated ten feet below the basement floor line; three, the placing of moving equipment under the footings and the construction of reinforced concrete mat sub-footings of such dimensions as to insure perfect floor alignment of the portion of the building not moved with that of the portion moved, keeping in mind the fact that the portion moved would be placed on these newly constructed sub-footings, which must support the immediate load to which it would be subjected, and maintain the same without risking a possibility of the slightest degree of settlement.

This problem caused much concern, even to the consulting engineers, until it was explained by Mr. Kress that columns of the building would be concentrated on patented adjustable jacks, steel plates, steel rollers and tracks, which would be so placed that, as the building moved, it would compress the soil under the new mats as the load was gradually transferred thereon, the patented method of adjustable jacks, above described, making it possible instantaneously to raise the building, should the weight of same cause even the slightest degree of settlement in the newly constructed footings when subjected to the load.

Commercial Exchange Building, Los Angeles, as it appeared after an 8½ ft. slice had been cut out of the structure.
(Courtesy Southwest Builder and Contractor)

On July 29 the physical work was actually started; on October 16, the moving equipment having been placed and the section removed, the much questioned and seemingly impossible engineering feat was accomplished.

It is a tribute to modern engineering that with the aid of mechanical devices a reinforced concrete structure approximately 55x50 feet and 160 feet high, weighing approximately 5000 tons was pushed and pulled a distance of five feet by 21 men exercising only their hand power. These mechanical devices consisted of machine-cut screw jacks specially designed for the purpose. Thirty jacks installed in the basement to push the structure were used at the start, but this number was reduced to 20 as soon as it began to

move. Eight men operated two each and two men operated the other jacks. Eleven men operated the pulling devices, one man to each. These devices were also machine-cut screws.

The jacks were two feet six inches in length and worked out of punt log shores, which made it unnecessary to reset them as the moving progressed. Each jack had a computed lifting power of 40 tons and a pushing force of 200 tons. The pulling and bracing devices, two of which were installed at every other floor, held the structure in perfect vertical alignment as it moved. Operation of the jacks and the pulling devices was controlled by electric lights so that the moving force was applied uniformly the full height of the building at all times.

The actual elapsed time required to move the structure five feet was nine hours. A two-story masonry garage abuts the building on the south. When the moving was started it was found clearance between the walls was lacking and operations were halted while the entire side wall of the garage was torn down as the only feasible solution of the difficulty.

Altogether about 75 men were employed on the job during the actual moving period, twenty-five of these giving their attention to the utility lines, pipes and wires, which had to be taken care of as the moving progressed, and others being required for incidental duties.

The new concrete footings on which the structure rests, are continuous and heavily reinforced. They extend to a depth of about ten feet below the footings under which the moving tracks were placed. When the building was in position underpinning was placed between the columns of the structural frame and the space between the old and new footings was filled with concrete.

The section cut out of the middle of the building was three and a half feet wider than the set-back. This allowed for cutting off and overlapping the reinforcing steel in the beams and floor slabs. Under the city ordinance the overlap must be forty times the diameter of the steel. Ordinarily steel ties are used on the overlap, but in this instance the overlapping bars were welded together so that the two sections of the building are firmly tied together. A tier of windows slightly wider than existing ones has been be placed in the panel where the structures are joined. One point of great significance which should be borne in mind is that during the entire operation, with the exception of the eight-foot six-inch section removed, and the deep excavations in the basement, no portion of the building was disturbed, not even the glass enclosing the storerooms on the first floor, and although the entire building was filled to capacity with tenants, none of these tenants were in the least inconvenienced; in fact, many of them were not aware that the building had been severed into two units and that in passing through the corridor tunnels they were walking through space, the top floor being 160 feet above the point of excavation in the basement.

THE MONTANA EARTHQUAKES

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cantile buildings being of masonry, bearing-wall type; some were four or five stories high.

"An impartial appraisal of many of these old structures before the shocks would have condemned them so far as assured safety is concerned," Mr. Engle reports.

He continues: "Damage to bearing-wall buildings was the typical result of quakes on such structures: parapets came first, then front walls over show windows and gable walls parallel to interior framing fell out. Some walls collapsed in whole or in part, leaned and bulged out or were badly loosened up with the typical X-cracks in the wall panels.

"The people of Helena face a serious situation in the rehabilitation of their city. It is no disgrace to admit the inadequacy of past practice in design and construction, but it will be a disgrace if engineers, architects and residents of the district generally fail to profit from their lesson. Rehabilitation to be intelligent must be more than repair: it must include strengthening and additional safeguarding against future shocks."

SAN JOSE LIBRARY

In the event that the present library building in the State College grounds, San Jose, is sold to the State of California, the old post office building at Market and San Fernando Streets will be remodeled and used as a central library. Ralph Wyckoff, of San Jose, has been commissioned to work out the proposed alterations.

TWO RESIDENCES

W. W. Wurster, 260 California Street, San Francisco, has completed plans for two residences, one at Paso Tiempo, Santa Cruz, for O. M. Lombardi, and the other at Visalia for J. F. Cutler.

With the Architects

COURT HOUSE

Federal funds and a bond issue will finance the $450,000 court house and jail at Salinas, Monterey County, plans for which have been prepared by Charles E. Butner and Robert Stanton. Construction is expected to get under way the first of the year.

C. O. CLAUSEN BUSY

One of the busiest architects in San Francisco is C. O. Clausen, whose studio is at 746 46th Avenue. New work includes a Spanish style house in Santa Rosa for C. A. Kopli; dwelling on 15th Avenue, San Francisco for Harry Daniels; house on 10th Avenue, San Francisco, for Grace Ringressy; house in the Marina, San Francisco for T. J. Webb and a French style dwelling at Sea Cliff, San Francisco.

EARLY CALIFORNIA RESIDENCE

Roland I. Stringham, 525 Market Street, San Francisco, has prepared plans for a $25,000 brick veneer dwelling for Hebert C. Cheek to be built on the latter's property in Bowling Drive, Claremont Pines, Oakland. Emil Person is the contractor.

PLEASANTON SCHOOL AUDITORIUM

Bids have been taken for the construction of a steel and concrete auditorium at Pleasanton from plans by Henry C. Smith, architect of San Francisco. The building will cost $50,000.

SCHOOL AND RESIDENCE WORK

New work in the office of Masten & Hurd, San Francisco, includes a $70,000 grammar school building in Redding, Shasta County, and a $30,000 district school at Truckee; also two dwellings costing $10,000 each to be built on Sloat Boulevard, San Francisco for Matt A. Little.

CALIFORNIA COLONIAL RESIDENCE

Plans have been completed by Messrs Hertzka & Knowles, 369 Pine Street, San Francisco for the first of a group of California Colonial dwellings to be built in Redwood City for George Becker. The house will have five rooms, two baths, 2-car garage, steel sash, shingle roof and stucco and rustic exterior.

KINGS DAUGHTERS HOME

Plans have been completed by Julia Morgan, architect, Merchants Exchange Building, San Francisco, for a two-story, 10-room brick and concrete addition to the King s Daughters Home at 3900 Broadway, Oakland. Construction is in charge of F. C. Stolte, 3455 Laguna Avenue, Oakland.

ALAMEDA LIBRARY

Bids have been taken for the construction of a one-story frame and stucco branch library building in Alameda from plans by Carl Werner.

SAN FRANCISCO SCHOOL

Construction will go forward at once on a reinforced concrete addition to Aptos High School, 30th Avenue near Lawton Street, San Francisco, at an approximate cost of $100,000. Dodge A. Riedy, is the architect.

QUAKE PROOF BUILDINGS

H. J. Brunnier, structural engineer, Sharon Building, San Francisco, has been commissioned to prepare plans for restoring a number of public buildings at Helena, Montana, damaged by the recent earthquake. Lateral bracing will be used on some of the smaller buildings which were damaged slightly. The structure most damaged was the high school which was only recently completed. The auditorium and science wing will have to be completely replaced. Hugenin & Dekay of Helena, Montana, are the architects.

CHICO HOSPITAL

Plans are being completed by Chester Cole for a reinforced concrete hospital at Chico estimated to cost $75,000. W. Adrian is the structural engineer.

REDWOOD CITY DWELLING

Plans have been completed and bids taken for a two-story brick veneer residence in Redwood City for Mr. and Mrs. W. O. Tyson. Gardner A. Daily, 210 Post Street, San Francisco, is the architect.

TEN STORY APARTMENT BUILDING

The first large apartment building to be constructed in San Francisco since the depression is expected to be under way this month from plans by H. C. Baumann, architect. The ten-story structure will occupy the northeast corner of Broadway and Buchanan Street, San Francisco, and will represent an investment of $250,000.

SMALL HOUSE COMPETITION

The eighth Small House Competition conducted by House Beautiful closed on October 15 with 152 entries and with such a high percentage of fine houses that the prize winners are really distinctive examples of what has been done in the way of small house planning during the past year.

Plans and photographs were submitted in three classes, the first embracing houses of eight rooms or fewer; the second, houses of nine to twelve rooms, and the third, remodeled houses.

In Class 1, H. Roy Kelley of Los Angeles was awarded the first prize of $500 and Harrison Gill of New York the second prize of $300. First prize in Class 2 went to Richard Frederick King of Los Angeles, and second prize of $300 to Robert Charles Dean of Newton, Mass. Evans, Moore and Woodbridge of New York received the special prize of $300 for remodeled houses.

Honorable mention in the three classes were awarded as follows:

Class 1: First honorable mention to William Wilson Wurster, San Francisco. Others to receive honorable mention were Donald D. McMurray, Pasadena; David J. Witmer and Loyall F. Watson, Los Angeles; Royal Barry Wills, Boston; Palmer Sabin, Pasadena; Perry M. Duncan, New York; Edward Stuart Phillips, Meadville, Pa.; William Wilson Wurster, San Francisco; C. Roderick Spencer and John James Landon, Los Angeles.

Class 2: First honorable mention to William Wilson Wurster, San Francisco. Honorable mention to Eldredge Snyder, New York; Royal Barry Wills, Boston; Palmer Sabin, Pasadena.

Class 3: Honorable mention to John F. Staub, Houston; James Mackenzie, New York.

The awards were made by a jury of five, composed of Cameron Clark and Arthur C. Holden of New York and Russel C. Walcott of Chicago (all members of the American Institute of Architects), Arthur Samuels and Ethel B. Power of House Beautiful.

F. M. THEBO

Fenwick M. Thebo, who supervised the construction of the Southern California Edison Company's hydroelectric projects at Huntington Lake on Big Creek in Fresno County, died at his home in Alameda, aged 60 years. He was senior member of the construction firm of Thebo, Starr & Anderton, Inc., of San Francisco.

TILE COMPANY CHANGES PERSONNEL

Paul G. Larkin has acquired the interest of F. P. Schemmel in the firm of Solon & Schemmel, tile and pottery manufacturers of San Jose, and the firm name hereafter will be Solon & Larkin.

ARCHITECT DIES OF INJURIES

Fred M. Schadler, architect, of Reno, Nevada, died November 6 of injuries caused when he was struck by an automobile while crossing a street a week previous.

PERSONALS

Perrine & Mackie, Herbert E. Mackie, architect, have moved their office from 506 to 908 Western Pacific Building, 1031 South Broadway, Los Angeles.

G. Albert Lansburgh, architect, has moved his office from 140 Montgomery street, San Francisco, to the Bond Building at 321 Bush street.

Henry H. Meyers and **Miss Mildred Meyers** announce the removal of their office in San Francisco to the new studio building which Mr. Meyers has just completed at 2024 Central Avenue, Alameda.

Martin C. Parker, architect, has moved his office from Long Beach, California, to suite 528 Aztec Building, San Antonio, Texas, for the general practice of architecture.

BUILDING SITUATION CONTINUES UP

More than twice as many family dwelling units were built during the first 10 months of 1935 as in the entire year of 1934, according to estimates of building permit records from all cities of 10,000 population or upward.

The 9,313 units constructed in October exceeded the October 1934 record by 158 percent. From January 1 to October 31, dwelling units provided numbered 66,261, which is 150 percent more than during the same period of last year and 112 percent more than in the 12 months of 1934. The September to October gain of this year was 28 percent.

The estimates are based upon building permit records from 775 cities, available through the U. S. Department of Labor.

EARL B. RUSSELL, C. E.

Earle B. Russell, junior member of the Engineering firm of Ellison and Russell, Pacific Building, San Francisco, died December 4 following one week's illness of internal hemhorrages. Mr. Russell was taken ill at his office, November 26. He was 47 years of age and a native of Santa Maria.

Mr. Russell took his degree with the class of 1911 at the University of California. Thereafter he was employed with several local contracting firms, including MacDonald and Kahn and Clinton Construction Company. For a period he was in the office of Charles Derleth and from there in 1923 joined W. H. Ellison in the firm of Ellison and Russell, consulting engineers. He was in charge of the Ellison and Russell office in Los Angeles for two years and then returned to San Francisco when that office was closed. He was the author of "Analysis of Continuous Frames," a volume which brought him international recognition.

Mr. Russell was a member of the Masonic order, Charter Oak Lodge, Berkeley, Islam Temple of the Shrine and Scottish Rite Bodies of San Francisco.

AN FRANCISCO CHAPTER

he regular monthly meeting of the American Institute f Architects, Northern California Chapter, was held t the San Francisco Museum of Art, Tuesday, Novem- er 26.

A general discussion followed the report of Henry H. Gutterson, chairman of the committee on practice, elative to a proposed revision of minimum fees. These ould correspond with the fees lately approved by outhern California Chapter.

t was moved by Mr. Allen and carried that copies f the proposed fee schedule be sent to the member- hip with request that criticism and suggestions be re- urned prior to January 1, 1936.

Upon motion of Mr. Evers, the sum of $10 was author- ed as a contribution to the Massachusetts Billboard aw Defense Fund.

At the close of business Mr. Corlett presented "The ossibilities of Color Photography in Architecture," lustrated by projection.

Recent developments in color photography were ex- plained, while views covering a wide range of subjects were shown on the screen. These, prevalently, were of fine composition and portrayed the accurate degree n which color may be reproduced through the use of color films.

The exhibit was of amazing interest and pleasure to he members and prompted generous praise of the peaker's artistry in this field.—J. H. M.

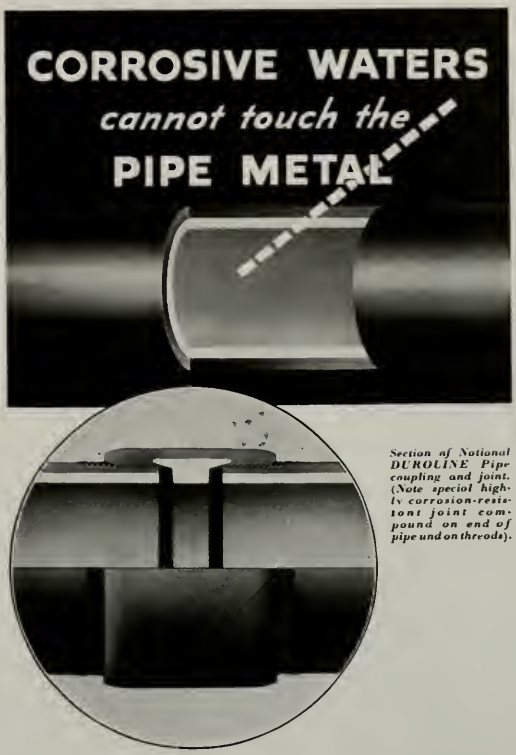
CHAPTER ELECTS NEW OFFICERS

At the December meeting of Southern California Chapter, A.I.A., the following officers were elected for 1936: Ralph C. Flewelling, president; Eugene Wes- ton, Jr., vice-president; George J. Adams, secretary, and Samuel E. Lunden, treasurer. S. M. Marston, di- rector for the three-year term. Henry Carlton Newton and Reginald D. Johnson are the hold-over directors. The November meeting was held jointly with Southern California Chapter of the American Institute of Dec- orators. Bernard Callingham, president of the decor- ators organization, was one of the speakers. Major Roger Brunswig of Paris, France, a designer and manu- facturer of textiles, was another speaker.

Lindley Bynum, field representative of the Henry E. Huntington Library in San Marino, described the material available in the library and art gallery. A number of the Chapter members visited the library during the afternoon of November 12.

TOWN HALL AND FIREHOUSE

Mill Valley will have a $50,000 town hall and firehouse, plans for which have been prepared by D. E. Jaekle and Walter C. Falch. Construction will be of rein- forced concrete and brick. The proposed town hall at El Cerrito has been abandoned, the bond issue hav- ing failed to carry.



Section of National DUROLINE Pipe coupling and joint. (Note special high-lv corrosion-resis-tant joint com-pound on end of pipe and on threads).

When Duroline Pipe is installed in hot- and cold-water supply lines, one thing is certain—even if the water is of a corrosive nature, its destructive influence is of no importance. Since the Duroline lining does not permit water to touch the pipe metal—no corrosion is possible. Therefore, you can have all the desirable features of steel pipe, such as uniform high strength, ductility, etc., with freedom from corrosion and tuberculation, at a cost only a trifle higher than that of galvanized pipe.

Architects, engineers and contractors will win appreciation for themselves and make a better investment for the owner by specifying and using this modern pipe in any type of structure, whether it be office or public building, hospital, school or residence. NATIONAL engineers will be glad to give further information. A bulletin on Duroline will be furnished on request.

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DUROLINE PIPE

THE FHA TAKES A STAND ON MODERN DESIGN.

IN ANTICIPATION of applications for insured loans on homes of so-called "Modern" design the Technical Division of the Federal Housing Administration has just issued a report setting forth a treatise on modernism and offering certain considerations where such designs are involved.

The report points out that the risk rating is affected by the relation of property to neighborhood and by the rate of obsolescence which the design on a house may suffer.

While obsolescence is nothing new in real estate, a stylistic change is an added factor, particularly while in its formative stage, the report continues.

In brief form some other suggestions contained in the report are as follows:

Modern design is characterized by functional planning to meet efficiently present-day modes of living, with economical use of materials, with exteriors frankly expressing the plan and relying solely on texture, color and arrangements of masses for esthetic effects. If achieved the result should be a high rating.

The relation of the house and its component parts to the lot is a noteworthy advance in most modern designs. The location of the garage near the street and the kitchen on the front allow the principal rooms to adjoin a garden at the rear. All of this depends upon the skill of the designer and the conformity to neighborhood patterns.

A house, modern in plan, is rarely adaptable to period treatment on the exterior.

"In any true stylistic development the movement is first dictated either by planning or structural considerations. Exterior treatments are in fact merely labels of what have taken place elsewhere and are, therefore, secondary features of a style. It is extremely important to keep this in mind. A style which is merely a new decorative system, a fashion in dressing an exterior, but which is divorced from planning or structural trend, is very apt to be short lived. Both tendencies are in evidence at the present time.

From the standpoint of real estate obsolescence it is desirable that designers be guided by skillful adaptation and gradual evolution to improve the elements of plan and structure. To produce beyond this calls for an investigation of the factors which impel the movement. The appeal of novelty is one such factor, and while its qualities may be fundamental, its effects are various.

With the improvement of taste the design factor has become more important and obsolescence on this score has been rapid.

"It is essential, therefore, to determine the fitness of Modern design, from the point of view of exterior appearance and decorative detail, to existing or anticipated ways of living and to distinguish, if possible, between what may be a mere fad and what may have an indiginous relation to the underlying factors."

There is no quarrel with Modern design. A flat roof is no more vital in Modern than in Georgian architecture. In some locations, because of added out-of-doors space, its rating might be positive; while in others, owing to climatic conditions and loss of heat, the rating might be negative.

"The corner window, frequently considered a Modern label, is at least as old as Gothic. If its use reflects the requirements of desirability for a window in that location, it is a rational adjunct of design. If it is used merely as a trade mark, it is only a fashionable imitation. In neither case does it have any essential relation to Modern architecture."

A more vital characteristic is the use of large glass areas, reflecting the vogue of sunlight and intimacy with the out-of-doors. This, like flat roofs, is subject to rational use determined by climatic conditions.

Modern architecture is no longer a perforated box or a series of grotesque shapes, rather is it a rationalized plan and elevation with a structural vocabulary suited to it, and it needs only the justification of breaking away from the traditional to strengthen its chances of permanence.

"While there are occasional demonstrations of a tendency to 'play with materials,' it would not appear that such is in any way characteristic of the movement."

The rating of such houses, after all, like other houses, depends largely upon how well the designer has solved his problem, and upon the public's reception or anticipated reception.

The above briefed excerpts from the report exhibit the fact that the Technical Division of the F.H.A. is cognizant of and sensitive to the present experimental tendencies exhibited by present-day modernism in residential design and construction.

ENGINEERS SEEK FEDERAL JOBS

At the recent annual meeting of the American Association of Engineers in Chicago the manager of the A.A.E. employment department reported that the engineer's own attitude of mind is the big hurdle now in the path of his rehabilitation in industry.

There is a perceptible reluctance on the part of professional engineers to re-enter private industry, the report says. This condition is attributed to a conviction among technical men that the turnover in industry is more rapid than in government projects. Whether it be true or not, this widespread belief among engineers is creating an actual shortage. The intermittent opera-

tion of plants has made engineering employment a matter of tenure for the duration of the job. Large engineering firms have maintained a skeleton organization, employing skilled technical men as they were needed for specific operations. This policy, entirely in harmony with other economies, is responsible for the marked preference that some of the better engineers show for government jobs.

Many applicants, when interviewed, frankly avow a preference for private industry; admit that the industrial job in question offers greater salary inducement; but reluctantly cling to a government job as affording a better chance of long-time employment. Directors, connected with both public and private enterprise in the east, the west, and the middle west, confirm the findings of the employment department. Engineers are still afraid of the intermittency of industry and of the brief tenure of such jobs.

Social security legislation is casting its shadow before it, A.A.E. employment department says; the 40-year deadline which has claimed the solicitous attention of the Association for many years is no longer the 40-year deadline—it has dropped to 32 and is trying to reach 28. The larger firms in filling the new technical positions that are opening up demand men of 28 and refuse to consider applicants over 32. Anticipating old age and retirement pensions and other social provisions that are likely to be mandatory, industry plans to catch them young. The complicating condition is a demand for "experienced" men of 28. Ten years ago that might have been possible. Graduating from a technical school at 24, a man would normally have had four years of engineering experience at 28.

But the classes of 1930, 1931, 1932, 1933 and 1934 have for the most part learned a lot about selling hosiery or aluminum, or have had their closest contact with engineering in C.C.C. camps or surfacing roads with the P.W.A. or C.W.A. For four years a small portion of the technical graduates have been absorbed by the engineering profession. Experienced engineers of 28 are members of the class called "avis rara." With a staggering list of unemployed men in its file of applicants, good men, graduates of the best schools and experienced, A.A.E. employment department has found it impossible to fill demands from industry for men under 32 with adequate experience to be placed in responsible charge of engineering work.

Another serious situation confronting industry is unmistakably indicated in A.A.E.'s contact with workers and employers; skilled workers of all kinds will be hard to find when production becomes normal. The signs are unmistakable in the contacts which A.A.E. employment department has, both with industry and with workers. Unemployment, intermittent labor at unrelated jobs, and psychological factors growing out of these conditions have produced in the hordes of men wanting jobs only a small proportion of the disciplined and skilled workers that came from the ranks through routine training in every great plant into fitness for skilled jobs. This factor, coupled with the scientific innovations that most industries are ready to inaugurate when full-time production opens up, will make it necessary for most plants to train men intensively for every kind of skilled labor.

CURRENT ARTICLES ELSEWHERE

"Fortune" for October has an article on the modern house as the inevitable next development. Discussing it as the house which works, it bases this prediction on functional rather than psychological reasons. A clever summing up of the movement as a whole, but devoid of the passions which infuse it. Recommended for lighter reading.

The role of materials in modern housing has been the subject of long experimental research by Bemis Industries of Boston. The American Society for Testing Materials is publishing a report on its findings, presented by John Ely Burchard at the 38th annual meeting of the Society at Detroit.

He critically discusses as a part of this research, the metals, concretes, synthetic materials, the vegetable group, and their possibilities for prefabricated use. The standards for evaluation are based upon:

1. relative permanence of dimension
2. lightness
3. adequate strength
4. durability
5. reasonable resistance to breakage from impact shock
6. good resistance to passage of heat
7. good resistance to passage of sound
8. fire resistance
9. weather resistance
10. beauty

Of first importance, and preceding these as a consideration, he places the question of cost. Housing must in general, he posits, be at reduced cost, and the use of materials governed accordingly.

A gentleman in a hurry, Mr. Charles Lay, writes in the November **Architectural Record** on the matter of new towns for high speed roads. His major idea is that speed must be the determining factor in planning the highways of the future, "with no more luxury in landscape treatment than enough to hide the dullness of factories or slums". Is not this evasion of the slum itself perhaps a part of the speed neurosis?

Basic considerations in making the house plan are, in the same issue of the **Record,** reduced in a condensed and summarizing outline which could well serve, so valuable is it, as a criterion of reference, a check-chart, to the student or the architect in making his plan. Except for its omission of the question of orientation to the sun as a first consideration in the preparation of a plan (an omission which can easily be corrected) its study of the functional, social, human, and practical details of closet arrangement, of the choice and placing of mirrors and fittings, is altogether complete.

Is Every Day Christmas Day . . .

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YOUR SOUND JUDGMENT in specifying Red Seal Wiring brings your clients many gifts that give pleasure every day. It brings many years of comfort and convenience enjoyed in using modern electric appliances, economy that really saves money by avoiding costly future extensions and adequate lighting that safeguards their eyesight.

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As the year closes we want to thank you for your cooperation and extend to you our most cordial Holiday Greetings.

Pacific Coast Electrical Bureau

447 Sutter St., San Francisco ★ 601 West 5th St., Los Angeles

MODERN ARCHITECTURE AND COMMON SENSE

BY IRVING F. MORROW, ARCHITECT

(Concluded from Page 53)

own justification. No less should a bad one be its own condemnation. But while critics reserve the privilege of attack, it is rather unreasonable to ask designers patiently and silently to invoke the ultimate verdict of time.

Modernists Are Not Unanimous on Principles.—Neither are classicists, gothicists, or any other considerable group of people. What is more, it is both unreasonable and unnecessary to expect that they should be .

Modernism Is Only A Passing Fad.—The demonstration of this contention runs as follows: The Art Nouveau was an innovation; it failed; therefore innovations are unsound. The assumption that the Art Nouveau failed because it was a departure from precedent is an excellent example of uncritical criticism. It failed because it was only a treatment of symptoms rather than of the underlying causal disorders. The conspicuous aspect of modernism—and the one which really arouses conservative resentment—is a drastic re-examination of the fundamentals of building requirements and technique.

What is overlooked is that the demonstration works equally well both ways. Every one of the consecrated styles is only an innovation which has succeeded. It is just as possible to argue, Egyptian architecture was an innovation; it succeeded; therefore innovations are sound. By the time you have repeated this with Greek, Roman, Early Christian, Byzantine, Romanesque, Gothic and Renaissance, not to mention the various regional varieties of each and the styles outside the European tradition, you have piled up a body of precedents in favor of innovation which quite overwhelms the lone negative testimony of the ill-fated Art Nouveau.

ENGINEERS DISCUSS QUAKE SURVEY

At noon, December 4th, a meeting was held at the St. Francis Hotel, San Francisco, under the auspices of the Industrial Committee of the California State Chamber of Commerce, to discuss the conditions under which the earthquake investigational work of the Coast and Geodetic Survey can continue; also to outline the program of local co-operative work which must be undertaken if appropriations for the Coast and Geodetic Survey work are to be forthcoming from Congress in the future. Dr. R. S. Patton, National Director of the Coast and Geodetic Survey and Capt. H. N. Heck, Chief of the Seismological Division of the Survey were present from Washington, D. C. to give an authoritative explanation of the situation. The meeting was well attended by business men, engineers, public officials and similarly interested parties. A most encouraging beginning was given to the program for local research work.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

In many instances NRA prices are still in force. Another month may find some material changes in price quotations. A 10% raise is being considered. Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $35 to $40 per 1000 laid, (according to class of work).

Face, $75 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.10 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, **$14.00** job cartage.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Discount 5%.

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton, $2.00 delivered.

No. 3 rock, at bunkers	$1.65 per ton
No. 4 rock, at bunkers	1.65 per ton
Elliott top gravel, at bnkrs	1.75 per ton
Washed gravel, at bunkrs	1.75 per ton
Elliott top gravel, at bunkrs	1.75 per ton
City gravel, at bunkers	1.40 per ton
River sand, at bunkers	1.50 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement, $2.25 per bbl. in paper sks.

Cement (f.o.b. Job. S. F.) $2.90 per bbl.

Cement (f.o.b. Job, Oak.) $2.90 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Calaveras White	$6.00 per bbl.
Medusa White	$8.00 per bbl.

Forms, Labors average 25.00 per M

Average cost of concrete in place, exclusive of forms, 30c pe rcu. ft.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

4½ inch Concrete Basement floor..... 14½c to 16c per sq. ft.

2-inch rat-proofing..... 6½c per sq. ft.

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 15c per yard.

Membrane waterproofing—4 layers of saturated felt $4.00 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $7.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 50 cents; clay or shale 80c per yard.

Teams, $10.00 per day.

Trucks, $18 to $25 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot.

Plate 75c per square foot.

Art, $1.00 up per square foot.

Wire (for skylights), 35c per sq. foot

Obscure glass, 26c square foot.

Note—Add extra for setting

Heating—

Average, $1.90 per sq. ft. of radiation according to conditions.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site)

No. 1 common	$30.00 per M
No. 2 common	24.00 per M
Selection O. P. common	35.00 per M
2x4 No. 3 form lumber	18.00 per M
1x4 No. 2 flooring VG	47.00 per M
1x4 No. 3 flooring VG	40.00 per M
1x6 No. 2 flooring VG	42.00 per M
1¼x4 and 6, No. 2 flooring	50.00 per M

Slash grain—

1x4 No. 2 flooring	$37.00 per M
1x4 No. 3 flooring	33.00 per M
No. 1 common run T. & G.	28.00 per M
Lath	6.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.00 per bdle.
Redwood, No 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T. & G. Maple ..... $120.00 M ft.

1 1-16x2¼" T & G Maple ..... 132.00 M ft.

⅞x3½ sq. edge Maple ..... 140.00 M ft.

	13-16x2¼" T&G	⅞x2" T&G	5-16x2" Sq. Ed.
Clr. Otd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Otd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	4.20
Pro-tect-o-mat, 1000 ft. roll	12.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.

Nails, $3.50 base.

Sash weights, $45 per ton.

Millwork—

O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel 1¾ in. Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.

Dining room cases, $7.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.

For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 29c per yard
Three-coat work ..... 40c per yard
Cold Water Painting ..... 10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lbs. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Medusa finish, No. 18 gauge wire mesh	2.00

Wood lath, $5.50 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.
Plasterers Wage Scale ..... $1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel, average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner center and around sides, will average 75c per lineal foot.

Note—Consult with agents.

Tile—Floor, Wainscot, Etc.—(See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestos Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	$9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Driver Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	$7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

Dr. Patton explained that the appropriations which were recommended to Congress for the continuance of the Survey's seismological investigations were stricken out entirely, and that for a time it appeared the work would be completely halted.

Earnest efforts were made to have the committee reconsider their decision, and appropriations to the extent of two-thirds of the original amount were restored to the budget appropriation bill. However, the committee made it plain that they regarded this work as peculiarly beneficial to California, and it was stated that California would have to co-operate fully in local supplementary work if the Coast and Geodetic Survey program was to continue after the ensuing year.

It was explained to the meeting that the local work which had tentatively been agreed upon at meetings previously held by representatives of the University of California, Stanford University, and California Institute of Technology, contemplate a division of labors. The University of California will thoroughly investigate past records and will make a thorough study of earthquakes which have occurred in different portions of the state during historical times. Stanford will carry on the measurement of the vibrations of buildings, and California Institute of Technology will study vibrations from their theoretical aspect in the light of investigations with models.

H. M. Engle, Engineer of the Board of Fire Underwriters of the Pacific, and Dr. Bailey Willis, Emeritus Professor of Geology, Stanford University, both made brief addresses emphasizing the importance of this work.

Chairman Will Corlett, to whom the conduct of the meeting was turned over by R. M. Alvord, Vice-Chairman of the Industrial Committee of the State Chamber of Commerce, correlated the remarks of the various speakers and further emphasized the importance of the program.

Captain Le Barre, the well known foundation expert of the firm of Converse & Le Barre, Los Angeles, who has worked earnestly to have this program adopted, was present from the south. Efforts to raise the annual $15,000 which the proposed work will cost will now be actively undertaken.

GRANTED CERTIFICATES

At the meeting of the California State Board of Architectural Examiners November 26, a Provisional Certificate to practice architecture in California was issued to Elliot J. Adams, 918 26th Street, Sacramento.

The Southern Board has issued provisional certificates to the following: James Walter Bertenshaw, 6815 Lexington Ave., Los Angeles; Merrill W. Baird, 220 S. Jackson St., Glendale; John Curtis Chambers, 445 N. Raymond Ave., Pasadena; Frederick N. Clark, 425 Bentley Ave., Los Angeles; Stanley Milton Falkenstein, 450 N. Hayworth Ave., Los Angeles.

Pressure treated lumber for home of Dr. John L. Pomeroy at Brentwood being placed.

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A NOTE ON EDUCATION IN ARCHITECTURE.

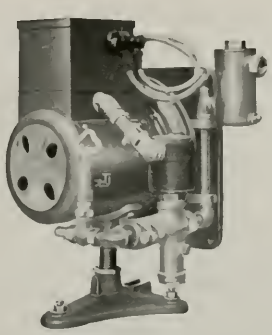
by A. C. Weatherhead
Dean of the School of Architecture, University of Southern California.

The advent about a decade ago of the modern at first created very little change in architectural education in this country. The schools merely adopted the shell of so-called modernism; and the resulting architecture was often very superficial. The criticism which followed forced educators to take stock of their methods, and a thorough readjustment has been taking place. It is too early to be able to predict just what the new education will be although certain broad tendencies are apparent from the significant experiments which are being carried on in most of the leading schools. There is everywhere evident a return to a fundamental principle which formed the basis in every great period of the past; it is that architecture must grow out of the conditions existing in the civilization which it serves and that training for the practice of this architecture must be governed by the same approach. Every design program from the freshman to the senior year now embodies some research in the needs of our present social order.

It is quite impossible to train architecture students also to be engineers; but they may be taught from the first to think structurally in their designs and to begin to appreciate the character of contemporary materials. School designs were never so brilliant and creative as they are today. The natural qualities and limitations of modern materials and the varied and complex functions of modern buildings when carried even to details are proving to be no hindrance to the student. On the contrary.

The word, modern, is now seldom mentioned. When designs develop logically out of living situations they lead automatically to a sound modern expression. The students are intensely conscious of a new American architecture; and the importance of building up the right approach toward this architecture can not be over-estimated.

The readjustment in architectural education is a large order. Many elements of traditional methods have long proven their excellence; and educators are reluctant to discard them until better ones are discovered. This must be considered still a transitional period. The main objectives, however, are very clear, and the results already obtained in many schools are full of promise for the future of modern American architecture.



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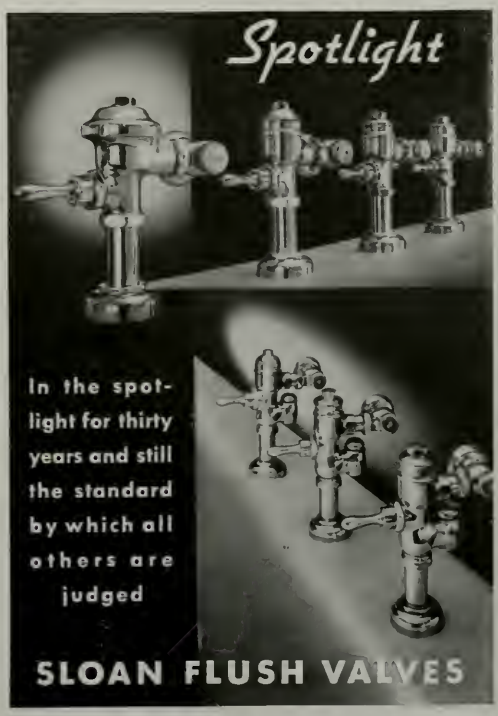

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BUILDING INDUSTRY ON RADIO

A radio broadcast to start the building industry on its way to a record year—1936—is announced in the following telegram addressed to the editor of this magazine and dated New York, December 9:

Nationwide radio forum of complete building industry over fifty NBC stations, January 13, 11 A.M. EST. will present most ambitious effort ever made to chrystallize entire building industry to militant action and grasp unprecedented opportunities immediately ahead. Leaders of every factor in building industry will address greatest mass meeting ever held in any industry. Problems will be thrashed out and solutions discussed. Johns-Manville Co. recognizing immediate need for strongest action has arranged this radio mass meeting of entire industry in order that leaders may point out

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responsibility each factor must assume. Meeting will be addressed by George LaPointe, President of National Lumber Dealers; Stewart McDonald, head of the Federal Housing Administration; Robert V. Fleming, President, American Bankers Association; Stephen F. Voorhees, President American Institute of Architects and Lewis H. Brown, President Johns-Manville. Each will outline responsibility of his field and entire forum will openly discuss and frankly consider new plans, new objectives and new hopes to stimulate and unify the entire industry. This great forum will be of real interest to the public at large. In order to hold home owner interest the program will feature such radio headliners as Edwin C. Hill, Kate Smith, Goldman's Band, Tom Howard, George Shelton and others.

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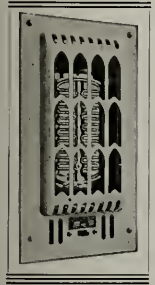

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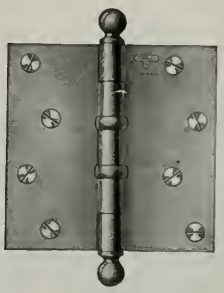

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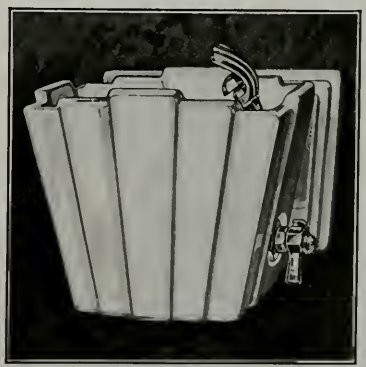

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Comparative Studies on the Construction and Cost of the Activity Classroom

By Richard J. Neutra

The raising of the question whether the old type of school classroom costs more or less than the activity type, as shown in the Corona Avenue Public School in this issue, has resulted in the following comparison of costs of the two types of building.

A classroom dedicated to activity study with its desirable free grouping of seating and working furniture, with light influx from two sides, and with liberal opening into an attached outdoor classroom was made the basis for research of suitable and economical constructions.

The classroom, twenty-three by thirty-eight feet, 12 feet high is entered by two 3 foot doors from the open air corridor on the east wall and is equipped with a sliding glass partition given broad access to the westerly patio, which forms an integral part of each classroom, doubling its instructional area. All glazing in steel sash and frames.

ALTERNATE "A"

Reinforced concrete skeleton, hollow walls executed with sliding metal forms and rib floors poured on metal pans, acoustic Celotex ceiling. Optimum post distance 12 fet 8 inches.
Glass 56% of floor area.
Ventable glass area 17½% of floor area, not including doors.
Cost per classroom 110 per cent of wood construction.

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ALTERNATE "B"

Concrete construction executed with air compression gun, without forms and with collapsible channel grill work as furring. (System Ruppel). Floor of reinforced concrete poured over hollow Terra Cotta tile. Thermax (Horaclith) roof sheathing by light steel trusses. Acousti Celotex ceiling.

Optimum post distance, 12 feet, 8 inches.

Glass area, 56% of floor area.

Ventable glass area, 16% of floor area not including doors.

Cost per classroom 107 per cent of wood construction.

ALTERNATE "C"

Galvanized sheet steel skeleton floor and trussed roof construction. Acoustical ceiling of Pumicite plaster, wood roof sheathing and sub-floor.

Optimum post distance, 4 foot 9 inches.

Glass area, 51% of floor area.

Ventable glass area. 15-2/3% of floor area not including doors.

Cost per classroom, 106 per cent of wood construction.

ALTERNATE "D"

Walls, posts, roof, of Robertson corrugated sheet-steel elements, floor construction of prefabricated, vibrated reinforced concrete joists bearing subflooring. Acoustical ceiling of Absorbox C.

Optimum post distance 12-13 feet.

Glass area, 56 per cent of floor area.

Ventable glass area, 17½ per cent of floor area not including doors.

Cost per classroom, 106 per cent of wood construction.

ALTERNATE "E"

Skeleton assembled of braced, rolled channel framing units, floors and roof of light weight Robertson cor-

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rugated sheet-steel sections on rolled steel beams. Exterior and interior surfaces: expanded metal and cement. Acousti—Celotex ceiling. Optimum post distance, 7 foot 6 inches.

Glass area, 56 per cent of floor area. Ventable glass area, 17 per cent of floor area not including doors. Cost per classroom, 111 per cent of wood construction.

ALTERNATE "F"

Standardized wood chassis with surfaced timber posts, floors borne by pressure infiltrated wood joists. Roof joists supported by continuous frontal trusses. Exterior and interior cement on metal lath. Continuous ventilation louvers for aeration of attic space.

Optimum post distance, 4 foot 9 inches.

Glass area, 51 per cent of floor area. Ventable glass area, 16 per cent of floor area not including doors. Cost per classroom, 100 per cent of wood construction.

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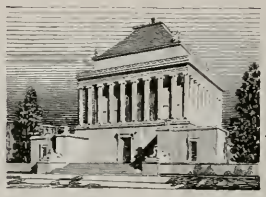

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"Le Corbusier 1929-1934". 600 reproductions of photographs, plans, and drawings, illustrating residences, theatres, office and public buildings, showing the approach of this architec to problems of individual buildings, and for the city plan as a whole.

The main body of the text describing the illustrations is in French. Le Corbusier's chapter "A New Classification of Town Building, a New Dwelling Unity" and the introduction, are given in French, German, and English. $8.00.

"The Modern House", by F. R. S. Yorke. Plans, designs, methods of construction, materials, equipment. Experimental and prefabricated houses. 500 photographs and details, drawn from modern dwellings in England and the United States, France, Germany, and Holland. $6.00.

"A Housing Program for the United States". A report prepared by the National Association of Housing Officials. Publication number 48. Public Administration Service, 850 East 58th Street, Chicago. 48 pp. Fifty cents.

"Flower Arrangement", by Rudolph Schaeffer. A series of photographic studies of the decorative table use of flowers. Published by Rudolph Schaeffer, San Francisco.

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UNRETURNED PLANS

What to do with the builder who, when invited to bid upon plans and specifications, submits his bid without returning the plans is a problem. Perhaps that is unintentional, a mere slip of good intentions, but there are times when it appears to be pernicious and deliberate. Several methods are used to deal with such a situation; a deposit to cover the cost of printing; but who wants to be ever asking the builder for a deposit. Sometimes the cost of the plans are trifling but the loss oft times becomes very annoying.

A well known architect said: "If plans and specifications are not returned with the bid I do not consider myself bound to consider the bid, and if plans are not returned after a mailed request is made for their return, then that contractor's name is stricken from the list of those eligible to figure in my office." However, the fact remains that architects are put to this inconvenience. Perhaps someone has found a good solution?—Ex.

GENERAL CONTRACT SYSTEM

At the convention of the State Association of California Architects held in Santa Barbara in October, the following resolution was adopted:

Whereas, It is often to the best interest of the owner and the architect to achieve centralized responsibility in the conduct of construction work, and

Whereas, The general contract system has much to recommend it in this regard; therefore be it.

Resolved, That the State Association of California Architects in annual convention assembled at Santa Barbara on the 5th day of October, 1935, recommends to its members that they give due consideration at all times to the advantages to be gained by utilizing the general contract method.

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Haas, Milton, Los Altos (Farr and Ward) May 31
Irvine, Jas. M., Altadena (H. Roy Kelley) June 19
Johnasing, Harry G., Flintridge (Newton & Murray) Nov. 27
Johnson, Parley, Downey (R. E. Coate) Apr. 50
Johnson, Wm. A., San Marino (Newton & Murray) Nov. 27
Keunzel, Paul, Palos Verdes (Newton & Murray) Nov. 22
Knight, T. Fenton, La Canada (Newton & Murray) Nov. 23
Koblick, Atherton, (R. J. Neutra) Apr. 31; Aug. 25; Dec. 32
Kutter, B. S., Beverly Hills (R. C. Fleweling) Apr. 33
Laing, Graham, Pasadena (H. Harwell Harris) Dec. 44
Leventritt, M. C., S. F. (W. S. Wellington) May 28
Livermore, Norman B., Ross (Bakewell & Weihe) July 21; May 26
Livermore, Norman B., Ross (Linda C. Avenali) July 21
Lowe, Pauline, Altadena (H. Harwell Harris) Dec. 42
Lynn, James, Beverly (Newton & Murray) Nov. 20
Manning, E. M., Palo Alto (G. A. Dailey) May 32
Marshall, E. F., Toluca Lake (Newton & Murray) Nov. 17
Mosk, Ernest, Hollywood (R. J. Neutra) Aug. 26
Norris, Kathleen, Outdoor Kitchen, Palo Alto (B. M. Clarke) May 22
Oliver, W. E., Los Angeles (R. M. Schindler) Dec. 18
Oulton, Dr. Berkeley (E. L. Snyder) Oct. 19
Reynolds, T. E., Dr., Piedmont (J. K. Ballantine) May 25; Oct. 14
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Scheyer, G. E., Los Angeles (R. J. Neutra) Dec. 10
Shaw, Robt., Pt. Richmond (Wm. Wurster) Dec. 46
Snoddy, Dr. Carl, Vallejo (F. L. Confer) May 36
Stark, A. W., Palm Springs, (F. L. Fuller) June Fnt
Stark, A. W. (Linda C. Avenali) June 11
Stewart, W. Foster, Los Altos (H. H. Gutterson) May 27
Taylor, Edgar, Berkeley (Michael Goodman) Dec. 49
Todd, Johnston, Pasadena Nov. 13
Wagner, Jno., Los Angeles (Newton & Murray) Nov. 21
Wantz, M. C., Berkeley (F. L. Confer) Oct. 24
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Williams, Stanley, Los Angeles (Newton & Murray) Nov. 26
Wolfe, Catalina (R. M. Schindler) Dec. 26
Wurster, Chester, Los Angeles (Newton & Murray) Nov. 24
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Residence, Health, Los Angeles (R. J. Neutra) Apr. 31

Residence of Steel (J. W. Williams) Apr. 35
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Residence in Piedmont Pines (Miller & Warnecke) May 30
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School, San Pedro High (Gordon B. Kaufmann) Feb. 21
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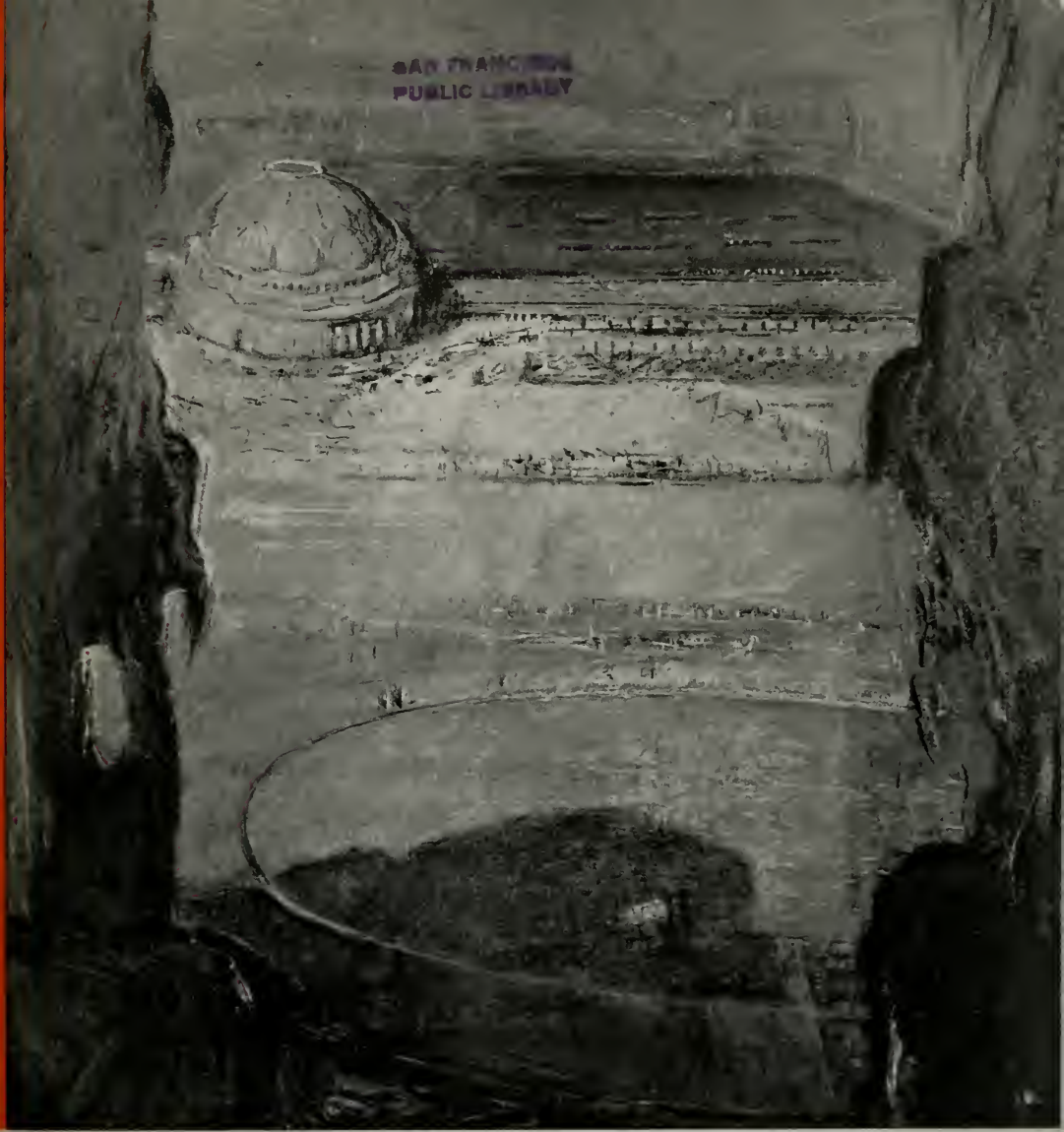
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The
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VOLUME 124 NUMBER 1 JANUARY 1936

COVER

REFLECTING POOL, ADMINISTRATION CENTER FOR LOS ANGELES
Proposed by William Lee Woollett, Architect

FRONTISPIECE

TERRACES AND GARDENS, ADMINISTRATION CENTER, LOS ANGELES
Proposed by William Lee Woollett, Architect

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NOTES AND COMMENTS

ENDORSEMENT by the Los Angeles Municipal Art Commission of a report covering a comprehensive scheme for the civic center and related areas in the Angel city, discloses a plan ambitious and imposing that might have materialized but for a change of policy by the Federal Government, which at the last minute has indicated its intention of choosing a different site than the one near the Railroad Terminal for its distributing post office. That Mr. Woollett's unique and not impractical "sunken garden" idea met with the unanimous approval of the city's art commission, is indicated by its endorsement of the survey and passage of a resolution requesting the author to submit a copy of his report to the American Institute of Architects for an opinion.

* * *

OUTSTANDING developments in home design this year promise to center around the kitchen and bath room. The use of drawn metal for sinks and drainboards will make for more attractive kitchens and greater permanency of fixtures, while bath rooms may be made more colorful than ever by using two tone colors, streamlined, of drawn metal.

Somebody has remarked that the bathroom of tomorrow will be such a pleasant place that "singing in the bathtub" will become a national habit. And this same wag adds: "Should you wish to sing 'The Star Spangled Banner' while bathing you can stand up in safety because some of the new tubs have nonskid bottoms."

* * *

COMMENTING on home building progress the past year *The Architectural Forum* says:

"The greatest advances have been in equipment and appliances, particularly in air conditioning, heating, plumbing and electrical devices, nearly all of which are suitable for houses of conventional construction. Air conditioning has increased in excellence and dropped in cost. Improvement in kitchen equipment has been spectacular. Strangely enough, scientific lighting of rooms is not yet generally practiced. All of this means that building science has not advanced as far as the Sunday supplements like to believe but has made definite and, in some cases, extraordinary progress. The building industry is about at midfield toward the goal of reducing the cost and improving the quality of the house."

* * *

REFERRING to present day housing tendencies, Ely Jacques Kahn, A.I.A., has summarized his prognostications as follows:

Flat and sloping roofs will hold their own.

Glass will bulk much larger in construction uses.

In metals, bronze is still the favorite, but it needs much care. Design tends to simpler forms.

We will not fake one material to look like another.

Economic conditions bar tall structures, but capital will be back in the skyscraper field when land values and rents create the right demand.

PRESIDENT ROOSEVELT stands like iron in his belief that we have come to a stage in the country's development when unlimited, unrestricted competition must give way to cooperation, and a planned economy substituted for the haphazard, helter-skelter, dog-eat-dog system under which America has been living. These same friends insist that the President believes that the profit motive can be divorced from greed and brutal disregard of ethics and fair play. Courage, initiative and enterprise are to be preserved as precious heritages, but they must be the real article, and not mere masks for rapacity. On that platform, I believe industry can stand with him. On that platform let us proceed now to pledge ourselves to go on to a new phase of usefulness.—CLYDE G. CONLEY, *President American Institute of Steel Construction.*

COMPARATIVELY little has been said of the inconsistency between billboards and highway beautification; and in most states the two flit side by side or in annoying sequence past the eye of the motorist.

That billboards are ugly will be denied by no one except those financially interested. That they are a menace to safety has been from time to time asserted but is not easy to prove except where they actually obstruct a view of the road at curves or intersections, and where beyond question, highway authorities should have power to remove them.

The inconsistency between billboards and landscape improvements should be apparent to anyone, observes a writer in *Roads and Streets*. Of what use is it to develop beautiful perspectives, or graceful slopes, or plantings of green shrubbery in the vicinity of a wood or metal sign which draws the eye by its size, sharp outline, and vivid color? It is silly to say that we need not look at the sign if we don't want to, for it is put there to be looked at, and its every feature is carefully designed to force attention. Every beauty of adjacent landscape is overwhelmed by its presence; while the distant scene too often is broken, marred, or actually obscured by it.

A few far-seeing corporations already have stopped their billboard advertising and others undoubtedly will follow suit, but many will refuse to give up what they consider a good advertising medium. These latter should be restricted by law as far as can be done under the Constitution.

* * *

THE Oregon State capitol competition is creating nation-wide interest and details of the program are expected to be made public shortly by the State Capitol Reconstruction Commission. The building is to cost $3,500,000 and prizes of sufficient size to attract the best professional talent in the United States, are to be awarded. Appointment of a technical adviser will be followed by the preparation of a program of procedure. Members of the State Capitol Commission include T. H. Bandfield, H. H. Lake and Dr. H. H. Olinger.

Watch Architectural Concrete!

The Public Market Building at Portland, Oregon, illustrates the distinction lent to commercial structures by architectural concrete. Lawrence, Holford, Allyn & Bean, architects

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THE technique of using concrete as a decorative material is advancing more rapidly today than ever before.

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LOS ANGELES

PROPOSED BY WILLIAM LEE WOOLLETT, ARCHITECT

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WORLD WIDE

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COMPETITION

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REFLECTING POOL, LOOKING TOWARD CITY HALL, ADMINISTRATION CENTER, LOS ANGELES, PROPOSED BY WILLIAM LEE WOOLLETT, ARCHITECT

ADMINISTRATION CENTER FOR LOS ANGELES

by

WILLIAM HAMILTON

A FORMER San Francisco architect has proposed a series of competitions, world-wide in scope, covering a period of possibly twenty years, whereby it will be possible to attract artists of reknown from the four corners of the world, to create an adequate plan for a new Administration Center in Los Angeles.

W. L. Woollett, the author, is architect member of the Art Commission of the City of Los Angeles, and also a member of the Mayor's Civic Center Committee, both of which organizations have received the Woollett survey favorably.

The accompanying drawings were made by Mr. Woollett for the purpose of arous-

WILLIAM LEE WOOLLETT, ARCHITECT
His Plan for an Administration Center in Los Angeles approved by Art Commission

ing interest in an Administrative Center and to further the idea of creating an adequate plan by means of competitions to be held in the leading capitols here and abroad. Mr. Woollett describes the features of his survey as follows:

"The site chosen for the Administrative Center is at the geographical center of the metropolitan area, which curiously enough, corresponds with the center of population of this area. The physical characteristics of this site are dramatic. To the West the shadow of "Old Fort Hill" dominates the scene as would an Acropolis; to the East expansion is blocked by the railroads and the bed of the Los Angeles River. The principal buildings for this Administrative Center are located on wide thoroughfares which constitute the vortex of the metropolitan traffic system. This site is also the site of the ancient "Pueblo" of Los Angeles.

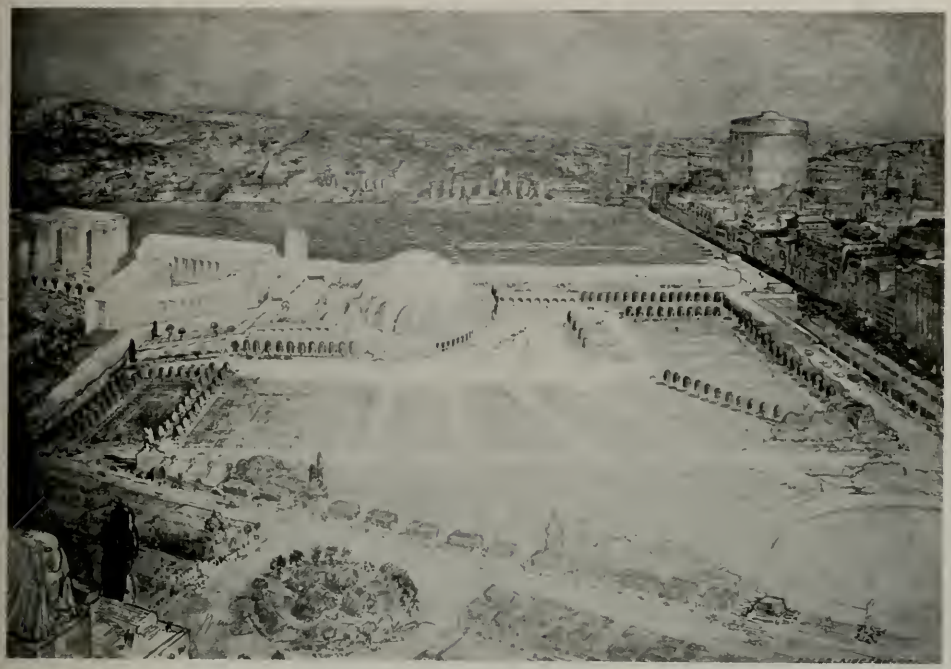
"The general perspective view is ambitious, but there is not a fictitious feature in the ensemble. Beginning with the Acropolis, a prominent feature of the group, it is proposed to terrace the hill, which exists as Old Fort Hill, for the purpose of an outdoor Architectural Garden and Museum. The crowning feature for the terraces would be the Opera House, which is cast in the form of a stepped pyramid. On special occasions the outside, as well as the inside, may be used as an auditorium. The advent of the loud-speaker makes this arrangement a practical means for accommodating occasional large audiences. This exterior seating capacity also provides a grandstand for those who wish to view the pageantry of a great city.

"Just below this group, on North Broadway, the city has already provided for a Police Building, which may be located in the ensemble drawing by means of a small tower.

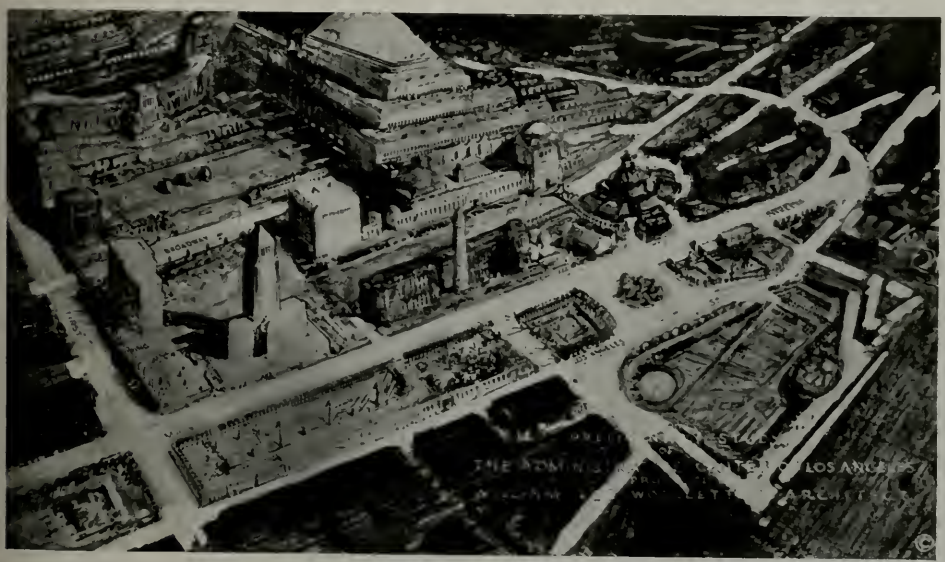
"To the left of the proposed Opera House group, the Hall of Jusice, just completed, is the first of a series of county buildings which in time might be expected to reach to the top of the hill. On the other side of the sloping garden space, which forms the background for our present City Hall, we see the newly finished State Building, first of a series of structures which should be necessary for the business of the State of California.

"In front of the City Hall stretches the 'mall', already dedicated by the mayor's given word to the purposes of added circulation for traffic and parking. A 'Prado' for the people begins at the old Plaza, near the Mission Church, and extends to the Church of St. Vibiana on Second Street. This great open space, comprising as it does, Main and Los Angeles Streets, and the block between these streets, will serve to foster the centralizing of business in this part of the metropolitan area.

"Immediately north of the City Hall, on the block now occupied by the Post Office, the Federal Government proposes to erect a large building, (i.e. some fifteen stories



AIR PLANE VIEW OF PROPOSED CIVIC CENTER, LOS ANGELES
Proposed by William Lee Woollett, Architect



PRELIMINARY STUDY OF ADMINISTRATION CENTER, LOS ANGELES
Proposed by William Lee Woollett, Architect

DETAIL OF RAILROAD STATION, ADMINISTRATION CENTER, LOS ANGELES
Proposed by William Lee Woollett, Architect

high) which would be about one-half the height of the tower of the City Hall." The studied plan of the Administrative Center, Mr. Woollett thinks, will be useful in estimating the probable effect, aesthetically, of a fifteen story building, in the location proposed, upon the City Hall as the central feature of the Administrative Center; and Mr. Woollett also suggests that the Acropolis upon which is placed so great an emphasis, might be considered as superfluous as background for such a building.

The old Plaza Church near the old Plaza is shown on the fringes of a proposed new "old" Spanish town which is intended to perpetuate the spirit and simplicity of the present Olvera Street.

"The Railroad Station, shown on the plan, as accusing the City Hall, in the form of its "plan" and entourage of fountains, gardens, etc., is proposed as a focal point for one of the secondary axis leading to the City Hall. The plan adopted for the Railroad Station does not make the gesture as suggested here.

The adopted city plan has, unfortunately, no main artery leading directly to the City Hall, the center of the Administrative Center. Hence Mr. Woollett has proposed a series of secondary axis leading to the City Hall. North Broadway is one of these. By means of a very minor change in the street near the proposed Police Building it will be possible to view the North profile of the City Hall as one approaches the city from Pasadena.

"The Los Angeles Chinatown, as shown to the East of the City Hall, already has its foundation partly laid, as the Chinese are now living in this locality. In time we may hope for a skyline similar to the one shown in the lithograph.

"That anything like these sketches will

ever be built is remote but not improbable," Mr. Woollett explains. "The actual form which the improvements will finally assume will be dependent upon the idiosyncrasies of many different minds. The object of these studies is to stimulate interest in this superb architectural problem so that, as time goes on, the citizens of the City of Los Angeles may be moved to place the details of this development in the hands of the great architects, sculptors, and painters of the world.

"During the period of construction of this Administrative Center, a great part of which must necessarily be built during the succeeding ten years, Los Angeles would probably be able to go a long way toward achieving its goal of becoming a recognized art center. However, this would depend very largely on the manner in which these competitions were sponsored. Undoubtedly artists from the four corners of the world would be glad to come to Los Angeles to work if they could be assured, not only of compensation for their labors, but an attitude of reverence and respect for their ability, an attitude which is so often found in foreign capitols, and concerning which we, of a newer and fresher civilization, know so little."

The survey has been indorsed by the Los Angeles Art Commission and a copy has been transmitted to Sumner Spaulding, president of Southern California Chapter, American Institute of Architects; also copies to Admiral Christian Peebles, procurement division, U. S. Treasury Department, Washington; L. O. Whitsell, president of the California State Railroad Commission, San Francisco; M. C. Blanchard, chairman of the Engineering Commission, proposed railroad terminal, Los Angeles, and Lloyd Aldrich, city engineer of Los Angeles.

PLAN FOR DEVELOPMENT OF WATERFRONT, BERKELEY, CALIFORNIA

With Federal aid Berkeley's waterfront is being transformed from muddy tidelands into a beautiful aquatic park and yacht harbor. The Eastshore Highway, which will be Berkeley's major arterial to the San Francisco Bay Bridge, will provide a natural tidal basin for the development of an aquatic park. Total cost of the project is estimated at $1,000,000.

MURAL: "THE FIVE CONTINENTS," BY FRANK BERGMAN

TWO LOW COST MEDICO-DENTAL OFFICE BUILDINGS

By

FREDERICK W. JONES

TWO low-cost office buildings, designed along modern lines to meet individual requirements of professional practice with maximum efficiency, have recently been completed — one at Rodeo, Contra Costa County, California, and the other in Oakland.

Through their simple, practical design the two buildings reflect the dignity and progressiveness of the medical and dental professions. Both undertakings, based on sound business principles, are already paying investments with improved working conditions for their owners. The architects, Wayne S. Hertzka and William Howard Knowles, found that efficiently planned rooms, properly lighted and ventilated, enabled the doctors to better care for more patients at one time than was possible in the usual type of office. Ease of access from the street, the prominence of the building and the combination of medical and dental offices, have been factors contributing to the success of the projects.

Dr. S. N. Weil, in commenting on his new offices, said that by contributing to the improvement of his community he takes greater pride in his practice and his patients, in turn, take greater pride in him.

Dr. Knowles finds that he enjoys working so much more in his new surroundings that he can accomplish better work with less effort than formerly.

A. Lyle Winslow, M. D., who leases from Dr. Knowles, finds that his attractive offices, planned and built specially for him, have brought him many new patients.

In addition to the advantages above mentioned the owners have, in these two buildings, self-supporting investments which, when they retire, can be sold or

OFFICE BUILDING FOR DR. S. N. WEIL, RODEO, CALIFORNIA
Hertzka and Knowles, Architects

Without sacrificing informality, the architects sought to endow this building with the special character of a physician's office in a small town. Dignity without extravagance, and an abrupt departure from customary residential design, were the principal requirements. Cost, including architects' fee, approximately $7,150.

CONSTRUCTION OUTLINE

Foundation: Portland cement.

Frame Construction: No. 1 Common Douglas fir, Redwood sills, Balloon type framing.

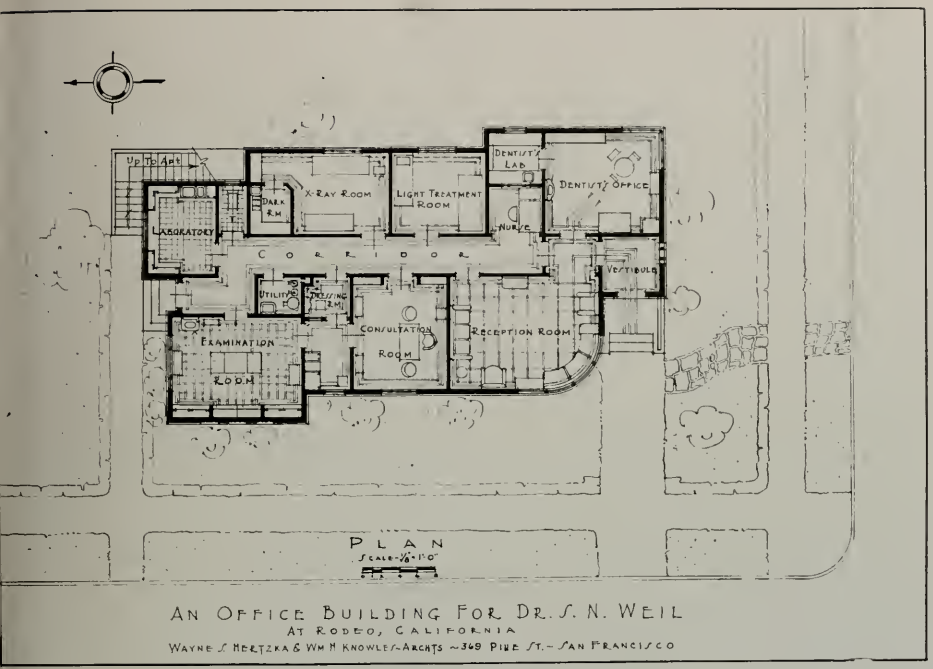
Exterior Surface: 3 coat stucco, smooth sand finish, Golden Gate Tan Plastic; white Monterey sand.

Roof: 10-year guaranteed flat roof.

Sheet Metal: Flashings and decorative facias galvanized copper-bearing steel—Forderer Cornice Works.

Doors: Interior—Douglas fir.
Exterior—Philippine mahogany.

Steel Sash: Projecting type with lower vents extended in.



PLAN, OFFICE BUILDING FOR DR. S. N. WEIL, RODEO
Hertzka & Knowles, Architects

The problem offered here was to meet the needs of a physician and surgeon in a town where there was no hospital. Special electrical equipment, not generally required, had to be provided in a compact plan. In addition, a complete dentist's office was included so that the unit could serve as the town health-center.

OPERATING ROOM

The examination room serves also as a minor surgery and is equipped to handle emergency cases not ordinarily brought to a physician's office. A special operating room type steel window gives maximum natural light.

Hill Studio

DETAIL, OFFICE BUILDING FOR DR. S. N. WEIL, RODEO
HERTZKA AND KNOWLES, ARCHITECTS

ill Studio

WAITING ROOM, OFFICE BUILDING FOR DR. S. N. WEIL, RODEO
Hertzka and Knowles, Architects

ented for additional income. In striking ontrast to this the money expended for omparable rented space over a period of ears would be considerably greater than hese investments without having anything o show for it upon retirement.

Both buildings are frame construction vith stucco exteriors. The interiors are imply treated plaster walls, soundproofed vaiting rooms and linoleum and tile floors. The psychological problem of putting pa-ients at their ease was solved by providing estful and pleasant waiting rooms, care-ully planned circulation of traffic and fully nclosed treatment rooms. The plans are so rranged that, after consultation, patients nay leave the building without re-entering he waiting rooms.

An analysis of the cost of the two espective buildings follows:

DR. S. N. WEIL'S BUILDING

INVESTMENT

Contract cost of building	$6,500.00
Landscaping and miscellaneous items	300.00
Architect's Fee	650.00
Cost of lot	800.00
Total Investment	$8,250.00

OPERATING EXPENSES:

Taxes	$1.00 per month
Insurance	2.10 " "
Gas (Including hot water for Apt.)	8.70 " "
Electricity	3.50 " "
Water (Including water for Apt.)	3.00 " "
Gardening	2.50 " "
Miscellaneous upkeep	2.50 " "
Total Operating Expenses per mo.	$23.30

OFFICE BUILDING FOR DR. C. B. KNOWLES, OAKLAND, CALIFORNIA
Hertzka and Knowles, Architects

As in the Dr. Weil Building, modern design was felt by the architects to be the simplest and truest expression for a medico-dental building. Textural differences between simple materials were used for decorative effect, and a color scheme of cerulean blue, rose and cream, played an important part in the composition. Cost—$5,500 including architect's fee.

CONSTRUCTION OUTLINE

Foundation: Portland cement.

Frame Construction: No. 2 Common Douglas fir, Redwood sills, Balloon type framing.

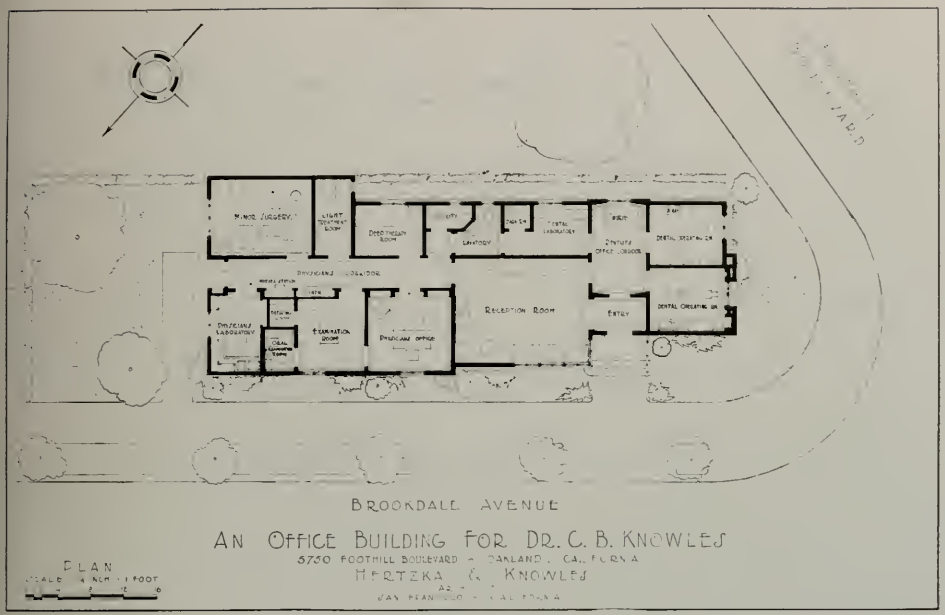
Exterior Surface: 2 Coat stucco, painted with "Bay State" brick and cement coating; Finished Redwood board and batten.

Roof: 10-year guaranteed flat roof.

Door: Interior—Douglas fir and Philippine mahogany.
Main Entrance—Philippine mahogany.

Steel Sash: Standard Light Casement without vertical muntins and set in place with fixed lights at bottom.

Wiring: Red Seal certified.



PLAN, OFFICE BUILDING FOR DR. C. B. KNOWLES, OAKLAND, CALIFORNIA
Hertzka and Knowles, Architects

Although built upon a narrow lot, all important rooms have ample outside light. Both examination room and minor surgery have special operating room type steel windows. The plan is arranged so that patients enter a reception room common to both dentist and physician, but may leave by separate exits. The large corner window affords the reception room an outlook toward the street.

OPERATING ROOM

Convenient wall niches in front of the operating chair are provided for technical books and interesting exhibits.

Swadley

DETAIL, OFFICE BUILDING FOR DR. C. B. KNOWLES, OAKLAND
HERTZKA AND KNOWLES, ARCHITECTS

Swadley

WAITING ROOM, OFFICE BUILDING FOR DR. C. B. KNOWLES, OAKLAND
Hertzka and Knowles, Architects

CAPITAL INVESTMENT		
6% Interest on Total Investment per month	$41.25	
3% Depreciation Fund	17.00	
Gross Expenditure per month		$81.55
INCOME		
Dentist's Office	$25.00	
Nurse's Apartment	25.00	
Total Income per month		$50.00
Total Cost of Owning Building Per Month		$31.55
(May be considered as rent per month)		

DR. C. B. KNOWLES' BUILDING

INVESTMENT		
Contract Cost of Building	$ 5,000.00	
Landscaping and miscellaneous items	300.00	
Architect's Fee	500.00	
Appraised Value of Lot	5,000.00	
Total Investment		$10,800.00

OPERATING EXPENSES:		
Taxes	$15.00 per month	
Insurance	2.10 " "	
Gas and Electricity	13.75 " "	
Water	3.50 " "	
Gardening	1.00 " "	
Miscellaneous Upkeep	2.50 " "	
Total Operating Expenses per month	$37.85	
CAPITAL INVESTMENT		
6% Interest on Total Investment per month	$54.00	
3% Depreciation Fund per month	13.00	
Gross Expenditure per month		$104.85
INCOME		
Physicians Office including Gas and Electricity	57.00	
Total Cost of Owning Building per month	$ 47.85	
(May be considered as rent per month)		

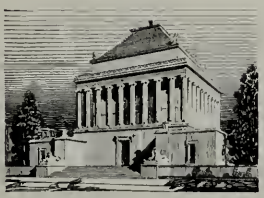
PENCIL SKETCH BY NATT PIPER, ARCHITECT

ARCHITECTURE AT THE NATION'S CAPITOL

By

KATHERINE STANLEY BROWN

in The Federal Architect



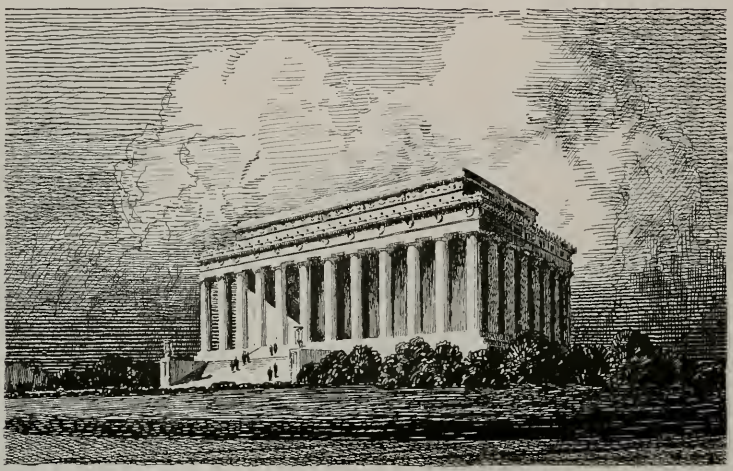
SCOTTISH RITE TEMPLE

THE city of Washington, of which the beautiful plan by L'Enfant has been well carried out and added to by the members of the various commissions involved, has, in spite of expert advice and the expenditure of a great deal of money, only achieved to my mind in the last fifty years five or six supremely beautiful and therefore supremely successful structures.

Architecture is a blend of practical necessity and artistic ability, but though one of the two may outstrip the other neither is sufficient, nor are both. There is possible in a building a quality of mind which is extremely difficult to trace or describe, an infusion of spirit, a meaning. Possibly the idea of the building itself—the event it commemorates, if it is a memorial,—is so stirring that not only the architect but the layman regarding the completed structure reads between the stones, as it were, and feels an emotional reaction which the actual mortar and bricks, proportions and details have no power to give. Occasionally the architect of the building or the sculptor of the monument has felt the underlying idea of his problem so powerfully and his technical skill is so great that his creation actually is suffused with the spirit of the idea that prompted it.

Certainly this must be true in the case of the Lincoln Memorial, else why do thousands of people from every walk of life, experts capable of analyzing the source of each fragment of its pure and beautiful Greek details, and laymen unable to do more than feel impressed, stand before it motionless, speechless? It is a good test of a building's worth if before it one has nothing to say. To the expert, counting the twelve columns across the front, possibly daring to criticize the effect of the lift of the parapet across the facade, it becomes a pleasurable exercise of skill, like analyzing symphonic form when listening to a Tschaikowsky symphony. But as he listens the musician is moved, perhaps in an even greater degree than in the days before he was so technically perfect. As he speaks, the archæologist, the artist, is stirred, but he seldom says those simple things that we all feel, for his mind is accustomed to involved convolutions.

If the emotional experience is great enough, however, he is thrown back into the lay vocabulary. A fine critic of design stood beside me the other night before the Memorial to Lincoln. The moon gave enough light for every detail of the facade to be visible, the majestic flood-lighted monument to Washington shimmered in the long reflecting pool, the statue of Lincoln—which no one could really do, which Daniel Chester French almost did—was bathed in a soft blue light. The idea of Lincoln, the man, his integrity, his work was upon us. "In this temple as in the hearts of the people for whom he saved the union, the memory of Abraham Lincoln is enshrined forever." We stood without speaking. "Knocked cold," as the present generation might say. The man who stood beside me said: "That thing makes me want to cry."



Drawing by Rudolph Stanley Brown

LINCOLN MEMORIAL, WASHINGTON, D.C.
Henry Bacon, Architect

A small boy of my acquaintance when asked to tell how one tells real poetry from mere verse replied: "It's poetry if it makes your stomach feel funny." This is not far from the scholarly analysis of the great A. E. Housman. He says when a "line of poetry strays" into his memory it is accompanied by various symptoms: ". . . a shiver down the spine; there is another which consists in a constriction of the throat and a precipitation of water to the eyes; and there is a third which I can only describe by borrowing a phrase from one of Keat's last letters, where he says, speaking of Fanny Brawne, 'everything that reminds me of her goes through me like a spear.' The seat of this sensation is the pit of the stomach." It would almost seem that poetry, as Housman also says, and by that same token, art, architecture, sculpture, were "more physical than intellectual."

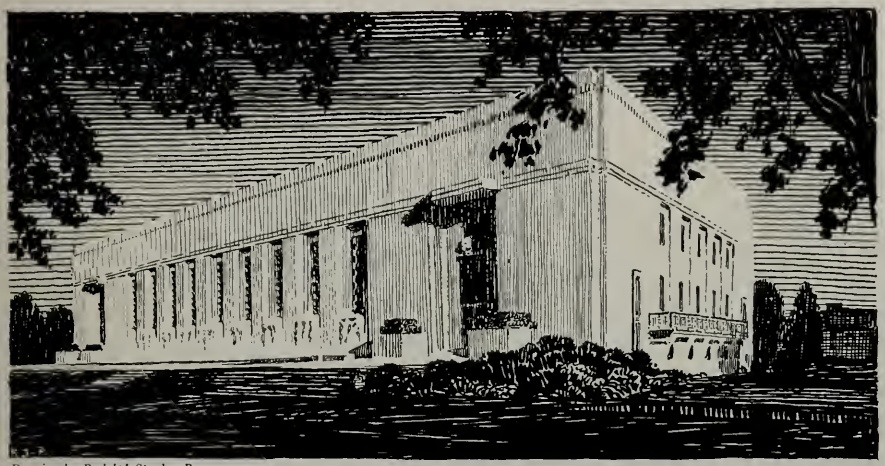
Empathy, the act of feeling one's way into a work of art, seeming to be one with it and thus understanding it, is a scientific fact. It is easier to describe the feeling when the work of art is small, whole, as a piece of beautiful sculpture, a picture, or a poem. A building can seldom be grasped in more than one dimension. One may stand in front of it, and admitting that it has a plan, and three or fifty other sides,

forgetting that and judge it from the impact of the idea of its facade upon one's mind.

Lincoln Memorial First

It is from this superficial, but certainly not unusual, limited point-of-view that I say there are only five or six supremely beautiful creations in Washington, of which for sheer inexplicable loveliness I should put the Lincoln Memorial first. And I would follow it by the Temple of the Scottish Rite.

To the architect the Temple of the Scottish Rite is a piece of archæology. It is an enlarged, a modified Mausoleum of Hallicarnassus; it is a projection of ancient shapes and symbols whose meaning is deep in the rites and traditions of "the ancient and accepted Scottish Rite of Free Masonry." Its carved sphinxes gaze down upon Sixteenth Street with as much aloofness and unexplained calm as their ancient Egyptian prototypes. The whole building towering above us, with each delicate cornice and moulding evenly balanced, each line of the whole duplicated and repeated, is infinitely pleasing to the eye, and in its stylized animals and unexplained shapes one adds to the pleasure of its symmetry an extra touch of surprise. The rear elevation is not so perfect but we have agreed to gaze in each case upon a single facade. It is a building which subdues one, awes one. The emotional reaction to it is intense, a combination of awe and curiosity. What does it mean? What do the Freemasons stand for? Even as before the Lincoln Memorial we think not of the building but of Lincoln, here we think of that secret and useful order with its roots, its origins far back in early traditions. The idea dominating the structure!



Drawing by Rudolph Stanley Brown

THE FOLGER SHAKESPEARE LIBRARY, WASHINGTON, D.C.
Paul P. Cret, Architect

Prior to the fifty-year limit which I have arbitrarily set myself, there are so many successful and beautiful old buildings in Washington that one would have to deal with them separately. The Washington Monument is a superb example of the embodiment of an idea. George Washington is a legend, a tradition; although much is known about him, much is disputed, and no two Americans admire him for quite the same reasons. Nothing therefore could ex-

press the nation's veneration and admiration for him but just such an abstraction as the monument planned by Mills, a simple and yet majestic shaft, meaning little or everything, depending upon your own knowledge and point-of-view. The Patent Office, the Treasury Building, the old Post Office, all built by Mills, are beautiful and were the beginning of a Greek tradition for Federal buildings which has persisted until this day with, through the years, less successful results.

All Fine Buildings, But—

The White House by Hoban is a splendid building, but to come to our problem, what is American, and recent, and fine in Washington today? The Pan-American building is fine, but it is recapitulated Spanish. It is history. Paul Cret, who with Albert Kelsey designed it would be the first to say so. The Freer Gallery has the distinction of simplicity but it is not an interesting building until one enters the courtyard, despite the fact that a fine architect, Charles Platt, built it. The Archives Building is dramatic, but it has too much appliqued to it, it is "fussy," to use a dressmaking term. It has not that peaceful reserve only possible through great wall spaces, skillful fenestration and restrained use of ornament. As you go by, the Archives Building glitters and flashes at you. I can only call it over-dramatized.

So then, this ideal facade that I am searching for must give me a sense of peace, of power, and of spirit. It must show me what the building is for to some extent, it must dominate my critical faculty, and give me a pleasurable emotion. I submit for this high office the Folger Shakespeare Library of Paul Cret. There the tall windows, the mouldings and cornices which seem to me to be the original conceptions of the architect, the beautifully sculptured panels portraying characters from some of Shakespeare's plays, the tragic and comic muses over the great doors, approach the majesty and power of Shakespeare's mind, reflect the hold that mind has kept through the centuries over humanity. The simple purity of that building, of the conception of that building, puts to shame the grandiose Roman elegance of the Supreme Court across the street.

The integrity of truth in order to administer justice should have been the spirit actuating the creation of that building. To the lay eye no such honest proposition is visible. Directly across the street from the Folger Library a little Lutheran church from the Church of the Reformation, is almost very good. It is quiet and meaningful but limited in that the impression of a single sculptured panel, which is the church front, is all that is fine. Another noteworthy building is the municipal power plant designed by Paul Cret. There the vertical lines, the condensed simplicity of the whole, make it outstanding among other buildings erected for the same purpose, but the mass of the building in itself has not to my eye sufficient lift and inspiration to rank it among my list of ideal Washington buildings.

ACADEMY OF SCIENCES,
WASHINGTON, D.C.
Bertram Goodhue, Architect

And the fourth building that I would have you look at is the Academy of Sciences Building by Bertram Goodhue. Long, restful, simple, the proportions of that facade are exquisite. The most exact

and beautiful Greek detail is used, the color scheme of white marble and bronze turned green is beautiful, and the great wall spaces, in which in the Greek tradition the stone courses are laid in uneven heights, are most interesting. Few of us can translate the Greek inscription that is applied to the frieze. But in our very inability so to do lies another certain symbolic power of the building itself. Who among us dares to say that he understands the wonders of science? And though we invent and discover and explore—and pin down on paper, in machines, in power daily more and more the facts of science—the illusive cause, the why these things are so eludes us forever. I feel that this building suggests all that to the lay mind, with the three shallow blue pools of water before it reflecting the changing sky, a poetic reminder that although we catalogue facts stolidly within our buildings, outside the changing water, wind and sky can find no adequate recorder.

Two Small Memorials

These are the buildings, and in a word the interior of each is sufficiently impressive as well. But there are two small memorials which, since I limited this article as I did to what is American, recent and fine in Washington today, must be mentioned. If they are not strictly architecture, at least an architect shared the planning and the design of them both.

The Adams Memorial. Ten feet from it one sits in the small enclosure planned so skillfully by Stanford White, cut off from the depressing stones to the dead, cut off from crowds and heat and traffic by tall holly bushes, tall pine trees. It is strange, mysterious, overwhelming. What does that single figure, fashioned of bronze, seated on granite, everlastingly silent, want us to know? Is the expression that of resignation? The world has failed but we will not let it know that we know? Are we to believe that this life over, there is more to come? The sunlight changes on the sculptured face. A man? A woman? Is that a shroud or only a cloak to shelter one from the world? The sensitive lips; the brooding eyes, closed as if in death, but closed too only as if in penetrating thought. The flesh is alive. Is it only grief? Or sleep? It is not entirely known if John Adams' wife died accidently or by her own forethought. Perhaps that is what St. Gaudens wanted us to know. That life is fluid, uncertain, unsolved, everchanging. To put that into stone, into bronze is a superb achievement.

The Titanic Memorial has no such seclusion and peace to shelter its noble thought nor is it nearly as fine. On the esplanade swinging down from Georgetown to the river, one goes by it quickly, carelessly. But even so, the most casual traveler feels the lift of those outstretched arms. "To the brave men who perished in the wreck of the Titanic. They gave their lives that women and children might be saved." It is caught forever in stone, that thought, that in honor women and little children, save them first. Call it gratitude, chivalry, what you will. The thought stirs the blood, the thought in stone does likewise. Henry Bacon, the architect of the Lincoln Memorial, designed it. Gertrude Whitney was the sculptor. It is fine as the embodiment of a single idea, even if it in no way approaches the superb abstraction which is the Adams Memorial.

Greek Traditions Praised

Perhaps all that I am saying after all is that Henry Bacon was a great architect; that I greatly admire the work of Paul Cret; that Bertram Goodhue was the most original architect that this country has yet produced; that Lee Lawrie and John Gregory and Brenda Putnam are fine sculptors, that Augustus St. Gaudens and Daniel Chester French were. That may be all, and yet what I have wanted to say is this: We have learned one thing in America about architecture, now that modernism has come

(Please turn to Page 40)

UNITED STATES MINT, SAN FRANCISCO,
OFFICE OF SUPERVISING ARCHITECT
GILBERT S. UNDERWOOD, ARCHITECT

ONE OF THE INTERESTING FEATURES OF THE DESIGN, NOT LEGIBLE ON THE PERSPECTIVE DRAWING, WILL BE A SERIES OF DISKS—REPLICAS OF AMERICAN COINS—TERMINATING THE TOP OF EACH RECESSED PIER. EACH COIN WILL BE THREE FEET IN DIAMETER AND ARRANGED IN CHRONOLOGICAL ORDER TO PORTRAY THE HISTORY OF AMERICAN COINAGE FROM THE FIRST MINTING IN PHILADELPHIA TO THE LAST SIGNIFICANT COIN MADE IN CALIFORNIA.

THE SAN FRANCISCO MINT

THE SITE of the proposed new Mint in San Francisco, bounded by Duboce Avenue on the south, Webster Street on the west, Herman Street on the north and Buchanan Street on the east, is a precipice of serpentine rock which rises ninety feet above the lower street level. Forty feet of rock is being removed to create the plateau which will receive the building.

The original proposal for the building provided for a facing of granite with an alternate proposal for using terra cotta. The building at the base is 207'-9" along the front and 185'-1" in depth. It is designed in modern classical style, and its walls will enclose four stories in front and three stories at the rear.

Basically the building is a manufacturing plant. It must respond to the need of manufacturing processes, in light, in area, in ventilation and in efficiency. In the architectural design this is expressed in large areas of window space and duo-lateral lighting from both the outside and the inside court around which the building is built.

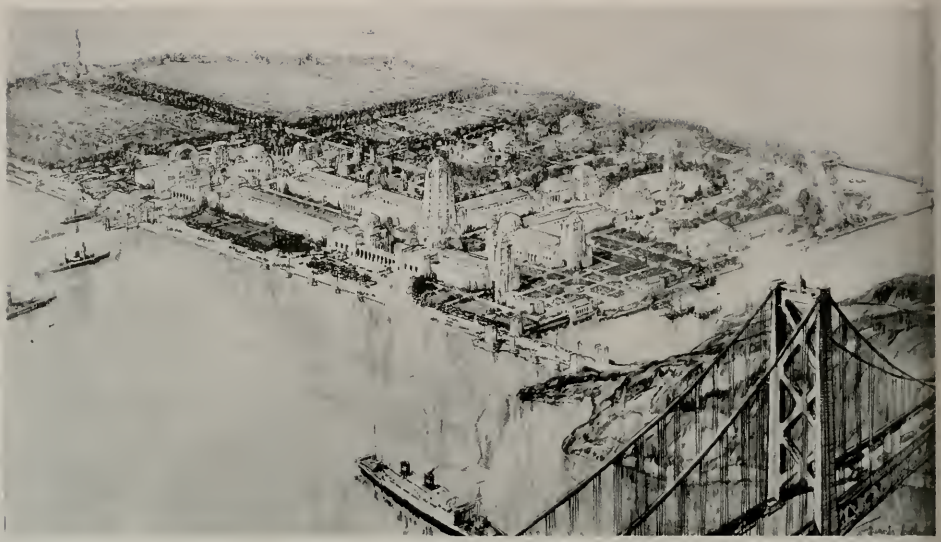
Across the Duboce front of the second floor are grouped the administrative and related clerical offices and such spaces as are provided for contact with the public.

While essentially a structure for the minting of money, the building is designed in a spirit of dignity. Its facades are symmetrical and regular in repetitive elements of pier and window. Its base slopes into the rocky hill, lending strength to the composition of the building and its relation to the site. Terminating the top of each deeply recessed pier is a replica of an American coin, some three feet in diameter. These disks tell the story of minting in the United States from the first coin struck in Philadelphia to the last signficant coin struck in California. Each coin is in its chronological order, so that a numismatist or a layman may read the history of American coinage by walking around the building.

The public spaces are developed in a simple but effective manner in marble and bronze. Surfaces are plain, almost severe. Changes in material are used to obtain emphasis rather than projected or moulded forms. Lighting is indirect without the use of exposed fixtures. All ornament throughout the building is symbolical in nature and has its inspiration from the coins processes of manufacture. The building is fireproof and earthquake-proof throughout. Vibration tests were taken on the site and vibration periods recorded before engineering calculations were started.

The site is to be landscaped with California flora. Its rocky character will be relieved with shrubs, but the natural formation and the varying and interesting color of the native rock will be an important part of the landscaping scheme. A formal hedge will separate the slope of the rocky site from the sidewalk, otherwise the landscaping will be largely informal. A stair rising from the center of the site on Duboce Avenue will unite the base of the site with the building. A continuous drive 20'-0" wide surrounds the building at the level of the plateau. It is entered from Herman Street at the north which is the main motor entrance to the building. Parking space is provided for sixty-five cars.

Clinton Construction Company, of San Francisco, are the general contractors, and construction is well under way.



PRELIMINARY SKETCH OF 1938 SAN FRANCISCO BAY WORLD'S FAIR, YERBA BUENA SHOALS, CALIFORNIA

Architectural Commission: Geo. W. Kelham, Lewis P. Hobart, Ernest Weihe, Timothy L. Pflueger, Arthur Brown, Jr., and William G. Merchant; Will P. Day, Director of Works.

A WORLDS' FAIR ON SAN FRANCISCO BAY

IN less than three years cities around San Francisco Bay will celebrate an international exposition to mark completion of the world's two largest bridges. This will be the first international celebration to be held in San Francisco Bay Region since 1915 when Panama Pacific International Exposition marked the completion of the Panama Canal. Sponsoring the exposition will be the San Francisco Metropolitan area which includes the cities of San Francisco, Oakland, Alameda, Berkeley, Albany, Hayward, San Leandro, Sausalito, San Rafael, Richmond, San Jose, Palo Alto, Redwood City, San Mateo, Burlingame and others.

The inspiration of the International Exposition will be the completion of the Golden Gate Bridge, linking San Francisco with Marin County and the Redwood Empire, and the completion of the San Francisco-Oakland Bay Bridge crossing the 8¼ miles of the bay between San Francisco and Oakland.

The Golden Gate Bridge, costing $35,000,000 boasts the longest suspension span in the world. The 4200 foot span between the San Francisco and Marin towers is 700 feet longer than the celebrated George Washington Bridge. The Golden Gate Bridge is also the first large bridge ever to be constructed across open sea. Its 746 foot towers are the tallest structures west of Chicago. Started in 1932, its completion is expected early in 1937.

The San Francisco-Oakland Bay Bridge, costing $77,000,000, is in reality a series of bridges from San Francisco to Yerba Buena Island in the center of the San Francisco Bay and thence to Oakland. A double-deck six lane roadway will take care of both automobiles and interurban train traffic. Towers of the bridge rise 520 feet above water, higher than the city's skyscrapers. Foundations of some of the piers lie more than 200 fet below the level of the bay, requiring in their construction, engineering methods never before employed. Started early in 1933, the San Francisco-Oakland Bay Bridge will be open for traffic the latter part of this year. The tunnel through Yerba Buena Island, connecting the San Francisco and Oakland units of the bridge, is the world's largest vehicular bore.

The site of the exposition lies in the center of San Francisco Bay, midway between San Francisco and Oakland, on shoal land located just north of and adjoining Yerba Buena Island. It is in the geographical center of a population area of 1,785,000.

During the current year, an area of 385 acres of this shoal land will be filled in to provide the site of the Exposition, and after the Exposition the land will be used for a modern municipal airport and seaplane base. According to present plans, the exposition area will be 5500 by 3420 feet—more than a mile long and about two-thirds of a mile wide—larger than the site of Chicago's Century of Progress. The exposition site will be reached by the bridges and also by ferries from San Francisco. Ample parking space for normal attendance is provided. The exposition site can be reached in approximately 10 minutes time, either from downtown San Francisco or from downtown Oakland.

Ideal weather conditions prevail at the shoals site. Government records show an almost complete absence of fog and rain during the months the exposition will be held, and average wind velocity of only six miles an hour.

The exposition will be in sight of both bridges and directly connected with the San Francisco-Oakland Bay Bridge.

Funds for seawall and fill for the exposition site have been provided through a $3,043,000 Federal WPA grant. The roadways, causeway, trestles, landscaping, and drainage of water systems are provided through an additional WPA grant of $1,296,000. A further PWA grant of $1,711,000 to be matched in part by local funds, will provide paving, ferry slips and some buildings. It is estimated that in addition to this $6,000,000 in Federal funds, another $6,000,000 will be raised through private subscriptions, for building and administrative expenses. A campaign for private subscriptions, through sale of bonds, is now being planned.

An attendance of between 15,000,000 and 20,000,000 is expected, which should enable the exposition to meet all operating expenses and to retire all obligations. The attendance at the Panama Pacific International Exposition in 1915 was 13,000,000. Chicago's Century of Progress drew 22,000,000 people in 1933 and 17,000,000 in 1934.

Approximately one year will be required to complete the fill and seawall. During that time, architectural plans for the buildings, taking in the requirements of the exhibitors and the needs of the airport to be established after the exposition, will be com-

pleted so that actual construction of the buildings can start in 1937.

It is estimated that the exposition during 1936 and 1937 will provide employment for more than 3,000 people in construction work. An additional 10,000 persons will be employed during the exposition itself.

The exposition will be international in scope. Its theme will be modern developments in transportation and communication as symbolized by the bridges, by the transoceanic air services and the progress in radio and television. Participation of foreign nations, particularly those around the Pacific and Central and South America, already is being arranged. The unique location of the exposition makes it possible to have merchant and naval vessels from every nation in the world actually a part of the exposition, anchoring alongside the exposition or tying up at the piers. Because the exposition grounds will later become one of the most centrally located and busiest airports in the world, aviation activities and developments will also be dominant features of the celebration.

The San Francisco Bay Exposition, Inc., which will operate the exposition, is a private non-profit company of civic, business and financial leaders of the San Francisco Metropolitan area, headed by Leland W. Cutler, former president of the San Francisco Chamber of Commerce. Vice Presidents are Bert B. Meek, executive vice-president of the Hearst Corporations; Kenneth R. Kingsbury, president of Standard Oil Company, and George D. Smith, managing director of the Fairmont and Mark Hopkins hotels. Treasurer is John F. Forbes, head of John F. Forbes and Company, financial experts. Secretary and Chief Counsel is Colonel Allen G. Wright. Chairman of the Board of Directors is Atholl McBean, president of Gladding, McBean & Co.

The executive committee consists of R. F. Allen, Alfred J. Cleary, George Creel, John F. Forbes, R. B. Hale, J. W. Mailliard, Jr., Atholl McBean, B. B. Meek, Kenneth R. Kingsbury and George D. Smith.

The City of San Francisco which owns the shoal lands, has leased the property to the company for exposition purposes, and the company will act as official agent of the City of San Francisco in the administration of Federal funds to be spent on the project.

The architectural commission is headed by George W. Kelham. Members of the commission include: — Lewis P. Hobart, Ernest Weihe, Timothy Pflueger, Arthur Brown, Jr., and William G. Merchant.

Director of Works for the exposition is W. P. Day. Assistant to the president and director of exploitation is Howard Freeman. Executive officer for the Exposition Company is Brigadier General William E. Gillmore, U.S.A., retired.

RESIDENCE OF THE MISSES GAIL AND MARIE HOUSTON, WESTWOOD, CALIFORNIA

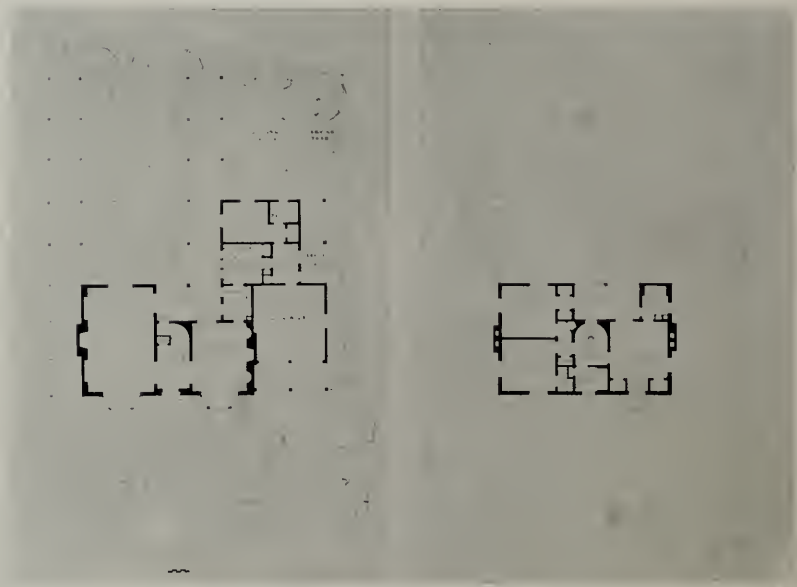
H. Roy Kelley, Architect

PRIZE AWARD HOUSE

A FORMAL Colonial type residence won for its designer, H. Roy Kelley, architect of Los Angeles, the 1935 House Beautiful prize. The award was made by a jury consisting of nationally known architects named by the A.I.A. Judgment was based on excellence of design and plan, economy in space subdivisions and convenience; adaptation to lot and orientation and skill in the use of materials. Readers of this magazine are familiar with Mr. Kelley's success as the winner of numerous national competitions during the past several years.

The accompaying illustration and plans, show the prize winning house—a Colonial dwelling owned by the Misses Gail and Marie Houston in Westwood, California. The exterior is of brush coated common brick with shingle roof. The interior partitions are plastered and the floors are of oak and linoleum. The house is equipped with a modern type gas-fired unit furnace, distributing thermostatically controlled warm air. A gas range and automatic gas water heater are also part of the heating equipment.

DINING ROOM, RESIDENCE OF THE MISSES GAIL AND MARIE HOUSTON, WESTWOOD, CALIFORNIA
H. Roy Kelley, Architect



PLANS, RESIDENCE OF THE MISSES GAIL AND MARIE HOUSTON, WESTWOOD, CALIFORNIA
H. Roy Kelley, Architect

BUILDING MODERNIZATION

By
CLARK BAKER

THE alert architect is realizing that right now he is on the eve of an upswing in building modernization, particularly of commercial building fronts, an upswing which can mean a great deal to him both in income and reputation.

There is a new attitude of commercial establishments toward the maintenance of attracive buildings — an attitude which came out of the experience gained during the depression—a knowledge of the value of the attractive and prosperous appearance of a building-front. In other words, the architect no longer has to "sell" his client on the advantage of modernizing his building front—the client realizes its dollars-and-cents value and is in a receptive mood to consider plans.

While the depression taught the commercial world the importance of attractive buildings, financial stringency prevented the majority from profiting from this knowledge. Now the Federal Housing Act organization is arranging the financing of modernization on very favorable terms, and hundreds of merchants are taking advantage of the opportunity to remodel their stores and business properties.

Not only is the individual merchant eager to improve his building, but there is a growing tendency toward the continuance of the cooperation learned during the past few years, and groups of neighboring merchants are considering modernization plans which are designed to harmonize entire blocks, or business areas.

An experiment of this kind projected by the property owners in a down town section of Oakland embraced plans for the harmonious modernization of an area of several blocks. Out of this original plan has come the complete modernization of fourteen buildings in the area, and many of the others are planning to follow through within the next year or two.

And such far-reaching development requires a great deal of foundation work and the collective study of all the crafts represented in carrying out such a program. From this necessity has developed an organized group which includes, in addition to property owners, representatives of each craft involved, such as architects, contractors, designers, lighting specialists, and the glass, tile, paint, and decorative metal industries. In addition, practically all of the clubs and associations devoted to civic im-

provement have representatives at the meetings, at which different aspects of the problems are presented by a representative member of each craft, and the problems discussed by the entire group. In this way every member is aware of the complete problem and how his particular contribution to the total effect of a building front is affected by the other factors.

As an example, the representative of the window glass industry gains an understanding of how lighting can be planned to eliminate the danger of undesirable reflections in the glass. The representative of the paint company learns what effect different methods, colors, qualities, and intensities of lighting have on pigment colors. The architect and lighting specialist study each others problems too, in order that the carefully planned architectural effect is enhanced, not reduced in effectiveness, by the lighting.

Group study by the crafts involved has been found as highly desirable as group action of property owners in modernizing a business area, as in both cases each profits by the activities of the others. The craftsman has a wider knowledge of his part in the total effect, and the individual store gains by the attractiveness of neighboring buildings.

Whole-hearted support is given these cooperative activities by a varied list of interested groups. Store managements know the selling power of attractive fronts, property owners welcome the increased percentage of revenue on their investments, realtors find modernized buildings easy to lease or sell, citizens want a beautiful city, architects are benefited by the attractive setting for their buildings.

The civic interest groups are particularly interested in programs of modernization of downtown property, especially at the present time when much property is in a rundown condition after several years of business depression, and they are lending their whole-hearted support to this program which promises increased attractiveness for the city.

ARCHITECTURE AT THE NATION'S CAPITOL

(Concluded from Page 31)

and gone its bones, that structuralism, functionalism, whatever you wish to call it, is a necessary fact in the creation of beauty. And then I, tentatively, because of this I am not sure, suggest that where an architect makes use of pure Greek detail, or of original detail based upon Greek traditions, he comes nearest to pleasing our national eye. For no reason perhaps beyond the fact that the Greek brought detail closer to beauty than the architects of any other period. We copied the Georgian architecture of England and made some lovely things, especially in our Colonial period, but now we seem to have lost the knack of doing more than actually copy. But with the Greek revival Federal buildings of Mills we struck a sure and a firm note. . . . There are dozens of beautiful fragments in Washington, certain corners of houses, bridges, columns, fountains; but these five, possibly six creations seem to me in beauty and in meaning to have accomplished their purpose.

DOME ROOF ELIMINATES COLUMNS AND TRUSSES

By

L. H. NISHKIAN, C. E.

ANCIENT structures are generally distinctively different from modern structures in one particular, namely, in the use of materials which take heavy tensile stresses. In all ancient works the major stresses in a structure had to be from necessity compression stresses. Thus were developed to a high degree the arch and the dome heavily buttressed to insure compression under the spreading action of such structions.

With the extensive use of steel, modern structures have developed new forms principally because with the use of steel in tension we no longer need heavy piers and buttresses to span over large areas. This development has occurred in practically all types except in domes. Heavy buttresses in domes have been eliminated by the use of ring steel, but it is still generally felt that the dome structure itself must be spherical or approximately so in shape, and fully symmetrical about a vertical axis to insure the absence of tensile stresses.

With the proper use of steel, however, it is not necessary to be so limited in the shape of dome structures. The accompanying photograph shows a reinforced concrete dome structure of new form recently designed by the writer and built in San Francisco. The dimensions of the room shown are 70′ 1″ x 44′ 6″. The side walls are 9″ thick; the end walls 6″ and there are only 4 columns, one in each corner, and one end is open practically the full width of the building. The rise of the dome is 8 feet. The joist are 4″x8″-24″ c-c, and the slab is 2½″ increased to 5″at ends where shearing stressed require a thicker slab.

In this type of dome there are, in addition to the direct stresses resulting from the spreading action due to the rise of the center, certain bending moments to be taken care of. The concrete joist shown are designed to span the width of the straight sections of roof, namely, about 16 feet. The spreading action of the roof is resisted by the sloping side sections of the roof acting as approximately horizontal girders and transferring the entire thrust to the end walls where the necessary tensile steel in the form of reinforcing bars is provided. Considerable shearing stresses are developed in the roof slab and the end walls which are, however, readily taken care of by the proper use of steel.

INTERIOR REINFORCED CONCRETE BUILDING FOR STEEL FORM CONTRACTING COMPANY, SAN FRANCISO, SHOWING NEW TYPE OF ROOF CONSTRUCTION. L. H. Nishkian, C.E.

Upon removal of the shores the center dropped a total of 1/8" and each side wall spread 1/16". When the sun warmed the roof, the expansion caused the center to rise to its original position but, of course, the lateral spread was not decreased.

In this particular instance, a three part roof was used. This can be varied to suit conditions. A roof may be made of two, three, four, five or more parts, depending on the area to be spanned, and the architectural treatment and other requirements. There is no limit to the spans one may go to except, as in all types of construction, the economic one of increasing costs with increasing spans. Concrete joists are here used; beam and slab or slab construction are equally possible, the choice depending entirely on consideration of cost and appearance.

The many advantages of this type of domed roof are obvious, such as absence of columns which gives a maximum of usable space and utility; absence of trusses which gives a maximum of head room; naturally pleasing appearance; adaptability to architectural treatment; better lighting and ventilation; less subject to fire damage and lesser cost for a similar construction with trusses. In this instance, the only extra cost involved over a similar roof on trusses was about $150 for reinforcing steel. Steel roof trusses, with supporting columns for this building, would cost not less than $600, showing a saving of $450, or about 15c per square foot in this case.

The building was built for the Steel-Form Contracting Co., for the storage of forms. Space utility, head room and economy were the controlling factors.

The various advantages listed above, make this type of roof construction particularly adaptable for use in garages, hangars, dance rooms, large dining rooms, auditoriums and theaters.

THE BONNEVILLE DAM PROJECT

SPANNING two channels—an island and the boundary line between Oregon and Washington—the Bonneville Dam is fast becoming a reality. Eventually this stupendous project will harness the Columbia River and put its waters to work creating electricity for manufacturing and domestic consumption. Completion of the dam is scheduled for July, 1937. A writer in the Standard Oil Bulletin summarizes the project into four units:

One — A main spillway dam between Bradford Island and the Washington shore (the widest channel), with an overall length of 1250 feet and a spillway crest 900 feet long. This will be joined to the power-house dam by a huge L-shaped levee across the island.

Two — Power-house and navigation locks between Bradford Island and the Oregon shore. It is planned to install at first two units of equipment for generating 115,000 horsepower, but the foundation work and substructure will provide for the addition of four more units to double the electric output. The navigation locks will be capable of raising ocean-going vessels from the lower river level to the upper river level, enabling them to penetrate several hundred miles inland.

Three — Relocation of railroads and highways on both sides of the river. This involves raising four miles of Union Pacific System tracks in Oregon a maximum of 34 feet, and relocating most of the Columbia River Highway east of Cascade Locks; on the Washington side, it means relocating about two and one-half miles of the Evergreen Highway, and raising the tracks of the Spokane, Portland & Seattle Railway a maximum of seven feet for a distance of almost five miles.

Four—Incidental work, including such preliminaries as the building of construction camps, social and sanitary facilities for the workers, and homes for the employees who will remain after the project is completed.

Engineers say that the Columbia is the greatest potential power-producer in North America; that it is capable of generating about fifteen times more power than it would be possible to produce by using all of the capacity of Niagara Falls; and that this and the other New Deal project in the Columbia Basin (the Grand Coulee Dam) will be two of the nation's greatest hydro-electric developments. These statements are easy to credit, for the Columbia is second only to the Mississippi in volume of

Looking west, downstream, from the Oregon side of the Columbia River, this view shows the site of the Bonneville project before work was started. The river may seem docile, but its volume of water makes this dam construction one of the most difficult ever attempted. (*Photograph by Photo-Art Studios*)

One view of the navigation locks being built between Bradford Island and the Oregon shore of the river. Above is seen the present Union Pacific Railroad right-of-way. The tracks of this line will be relocated, moved higher up the canon slope so big ships may pass where trains now run.

The power-house dam as seen from the downstream side. Over the roads in the foreground constantly roll Standard Oil trucks with fuel and lubricants used by the contractors. When the project is completed, these roads will be buried beneath water flowing through the power-house above the dam.

A recent photograph of the power-house dam, across the river channel on the Oregon side. The view is of the upstream face; during construction the water of this channel has been diverted. The power-house at this point will generate 115,000 horsepower, or 86,000 kilowatts; later this output may be doubled.

Illustrations Courtesy Standard Oil Bulletin

water. It rises in Canada, follows a devious course through Washington, burrows its way through the Cascade Range, via the famous Columbia River Gorge, flows through a green and fertile region, and finally joins the Pacific beyond Astoria.

Naturally the damming of such a stream involves tremendous physical difficulties. The first problem is to divert part of the water so that construction work can proceed—in itself a task such as is faced by few engineers. If you care for figures, here are a few: At its peak flow, this river carries more than 756,000,000,000 gallons of water a day past a given point. The average flow during each twenty-four hours would supply the City of Portland for thirty-seven and one-half years—one day's supply every four seconds. And finally, the average annual flow is enough to cover Oregon over two feet four inches deep.

It is impossible to work in the river during flood periods, and this means that one-half of the main dam must be completed in the working season of about eight months between floods, although much other work can be carried on the year around. During the winter there are the added difficulties of snow, low temperature, floating ice in the river, and many other conditions not encountered in a more southern clime. Therefore it is necessary to provide better than ordinary housing, complete little cities for the army of workers.

This project is so varied in its aspect, so tremendous in its scope, that it holds interest for the general public as well as for construction men and engineers. Among other things planned on a huge scale is a double radial cableway, now under construction, for use in pouring the concrete for the main dam. It will have a span of 2025 feet, supported by one tail-tower 217 feet high and two head-towers each 90 feet high. The gigantic bucket that travels this cableway will be able to deliver 25 tons of mixed concrete on each trip. This is just one of the sights that will attract visitors when the "pouring" stage of the dam is reached. Right now there are scores of interesting activities, from moving rock and earth in wholesale quantities, to erecting the masonry barrier across one channel.

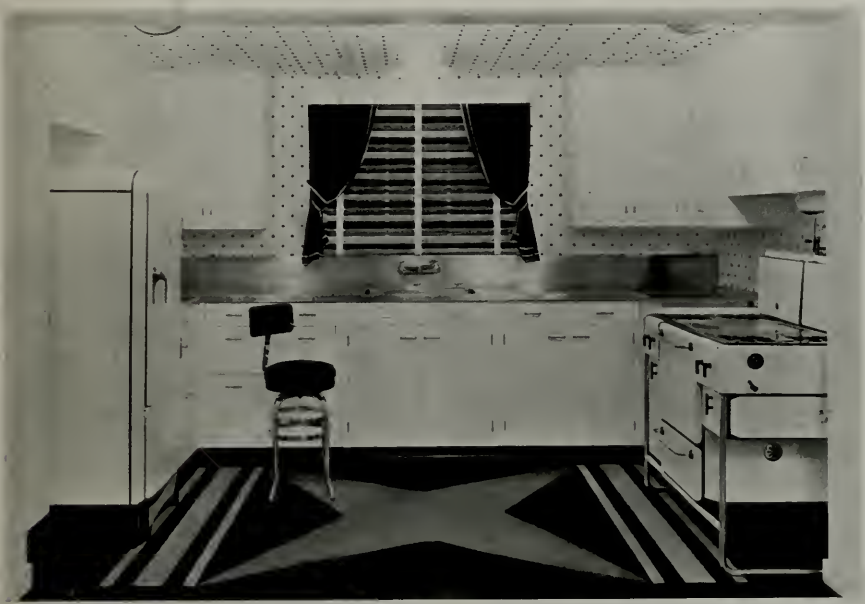
The aim of the Bonneville Dam project is to bring about development in industry and agriculture of the Pacific Northwest. There is a vision of great transmission lines carrying electrical energy far and near. Since the dam is located on two trans-continental railroads, the suggestion is that industrial plants locate in the shadow of the tree-clad hills. The construction of the navigation locks and the proposed deepening of the channel are to permit the loading of factory and farm products directly into ships for transport to all parts of the world.

A RAINY DAY IN SAN FRANCISCO, NOT 20 YEARS AGO, AS YOU MIGHT THINK AT FIRST GLANCE, BUT TODAY WHEN HORSE DRAWN VEHICLES ARE AS SCARCE AS HEN'S TEETH
Photo by J .E. Jellick

HOME OF THE MODERN METAL APPLIANCE COMPANY, OAKLAND, CALIFORNIA

MONEL METAL KITCHEN MEETS GROWING FAVOR

THE growing popularity of monel metal for domestic uses has brought a new company into the Trans-Bay field. With W. H. Picard, for many years a leader among the contracting plumbers in Northern California, as its president, the Modern Metal Appliance Company has been incorporated and offices and show rooms have been established at 4238 Broadway, Oakland. The location is an excellent one, being part way between Oakland and Berkeley, close to Pied-



ALL FIXTURES, TOP OF SINK, ETC., IN THIS MODERN KITCHEN ARE MONEL METAL

mont, and with the completion of the Bay Bridge, will be within driving distance of San Francisco. Formal opening of the display rooms was held early in December with a preview for architects and home builders, many of whom were astonished at the remarkable developments that have been made in recent months in monel metal products, together with the greatly reduced prices.

The new company is exclusive California distributors of such nationally known products as the Whitehead monel metal storage heaters, range boilers, tanks and water softeners; Inco standardized "Streamline" kitchen sinks, and "Straitline" cabinet sinks, tops and back splashers; also metal cabinets, flat rim bowls, strainers and faucets.

With reduced prices on monel metal goods architects are specifying them and they find their clients more receptive to their installation, since they not only insure greater durability than other fixtures but are designed with an attractiveness that make for a kitchen ideal in appearance and efficiency. Monel metal is two-thirds nickel and one-third copper—it is corrosion resisting and will not rust. Monel metal is said to be more than twice as strong as the material used in any other range boiler manufactured.

One wing of the Oakland building is devoted to model kitchen exhibits of monel metal equipment while the other portion of the building is arranged with bath room displays for Mr. Picard's separate plumbing business. The upstairs portion is given over to the executive offices and storage room.

NOCTURNE BY A MINOR OR ASYLUM FOR ARCHITECTS

(Caption suggested by a subscriber)

BOOK REVIEWS

By Edgar A. Kerulff

SPECIFICATION DOCUMENTS — Classified and arranged by David H. Merrill, Assoc. Member Am. Soc. C.E.; and Theodore C. Combs, Assoc. Mem. Am. Soc. C.E. Contains 522 pages. Published for the Pacific Coast Building Officials Conference, by R. C. Rolling and Associates; Los Angeles, California.

This volume will be found to have the utmost interest to architects, engineers, contractors and general building officials. It covers the whole field of specifications referred to under the uniform building code, which are legally a part of the code, and are required to be filed with the city or county clerk.

There are sixty - three standard and tentative specifications and test programs compiled from many sources. The text is amplified by the addition of a number of well executed drawings and illustrations. Nationally recognized engineering and technical societies have assisted in the preparation of this data.

COLOR IN SKETCHING AND RENDERING—by Arthur L. Guptill; Pencil Points Press, (Reinhold Pub. Corp.) 330-West 42nd Street, New York City, Price—$10.00.

Several years ago there came to the attention of the writer a copy of a book by this same author. At that time mention was made of the beauty and completeness of that volume.

"Color in Sketching and Rendering", is one of the outstanding books of its type to be published in 1935.

The architect who lives again his student days —the days in which he had the time and the full inclination to sketch those things that appealed to his developing sense of perspective and his widening vision—will find in this book a source of pleasure and delight. One can live again in retrospect these sketching journeys and it is a safe bet that many an architect who sees this book will dig out from almost forgotten corners the drawings and the color sketches made long ago for interesting comparison.

BAKERSFIELD SCHOOL BUILDINGS

Kern County Union High School District will hold an election January 17, at which time it is proposed to vote bonds in the sum of $200,000, proceeds to be used to finance high school improvements in Bakersfield. A similar proposal was defeated at an election held on December 6. Chas. H. Biggar, Haberfelde Building, Bakersfield, is the architect.

NEW SCREEN FOR METAL CASEMENTS

A problem which has offered considerable difficulty to architects and builders is that of attaching screens to metal casement windows. The Marvel Casement Screen Company of Brooklyn has recently introduced a new screen, complete

with a light frame of its own, which attaches directly to the casement frame by means of a patented clip. Screen and frame are made of rolled steel, and can be obtained in a variety of finishes, such as stainless steel, japanned, or lacquered in various colors to harmonize with the decorative scheme.

As will be seen from the accompanying photographs, the screen is hung on pin hinges to its own frame. The latter remains attached to the casement and need not be removed to detach the screen. Provision is also made for easily replacing of the bronze screening in case of damage or corrosion.

Ever since the general introduction of the steel casement window the problem of screening has been one of considerable difficulty. Many types of screens have been tried, such as roll screens, sliding screens, and others which were hinged directly to the sash. However, all of these required special tools for attachment, and were not always satisfactory in operation, since the mechanism was delicately adjusted and easily damaged.

This new screen can be put on in a few minutes by any handy-man without the use of tools. The clip, which is shown in the accompanying photograph, is the secret of the simple installation of this new device. This clip is made of spring steel, securely attached to the screen frame, and when once in place makes a permanent attachment. The method of pivoting the clip is unique and is the important patented feature of the new screen.

The screen is said to be particularly suited for use in large apartment houses, hospitals, offices and public buildings.

ARCHITECTS' CONTRACTS FOR NEW SCHOOL BUILDINGS

A revised Agreement Form "G" governing contracts with architects for preparation of drawings and specifications for new school buildings in Los Angeles has been adopted by the Board of Education in that city. The new form, submitted to the building committee by Secretary H. E. Griffin, was prepared in collaboration with various representatives of the business manager's division, including the board's architect, A. S. Nibecker, the controller and a representative of the county counsel's office. Some of the main features of the revised Form "G" were summarized by the secretary in his communication to the building committee, as follows:

(a) The drawings and specifications shall be prepared so that the ultimate construction cost shall not exceed the preliminary estimate; and in such manner as to conform to all relevant laws of the State and to the Rules and Regulations of the State Division of Architecture;

(b) The fee to the Architect shall be 8% of the original contract cost, plus 8% of the cost of extras to the contract when the Architect is required to perform services in connection therewith; and the fee is to be paid to the Architect, as follows:

20% upon approval of the preliminary work; up to 50% upon the submission of the working drawings and specifications to the State Division of Architecture; up to 60% upon adoption by the Board of the working drawings and specifications; up to 75% upon award of the contract for the construction work; up to 85% upon completion of 50% of the construction work; and up to 100% upon completion of the construction work; it being understood that, if after adopting the working drawings and specifications, the Board does not advertise for bids for the construction work within thirty days, the fee shall be paid up to 75% as full and final payment to the Architect for services to the date of the payment;

(c) The Architect shall furnish structural engineering services; and if a Structural Engineer is retained by him, the Structural Engineer shall be paid (by the Architect) a fee of not less than 2% on wood frame buildings and 2½% on all other buildings, computed upon the same basis as the Architect's fee, with certain exclusions of work in connection with which the Structural Engineer performs no services;

(d) The Architect shall retain a Mechanical Engineer who shall be paid (by the Architect) a fee of not less than 5% of the contract cost of construction work that is based on drawings and specifications prepared by the Mechanical Engineer;

(e) The Architect shall retain an Acoustical Engineer if necessary;

(f) All employees engaged under the Agreement shall be paid not less than the following hourly wage rates:

Senior Technical Employees, $1.25 per hour.
Junior Technical Employees, $0.87½ per hour.
Apprentice Technical Employees, $0.50 per hour.
Bookkeepers, typists, and other similar non-technical employees, $0.60 per hour;

(g) Every employer of labor shall carry proper compensation insurance;

(h) Provisions for time limits for the completion of the architectural work;

(i) The Board may cancel the Agreement if the Architect fails to provide prompt, efficient and thorough service;

(j) The Board may suspend indefinitely or abandon the construction of the building, in which event the Architect shall be paid in proportion to the work performed by him;

(k) The Architect shall supervise and superintend the construction work and shall approve the contractor's requests for payments; and

(l) All drawings and specifications shall become the property of the District;

Revised Form "G" includes other provisions similar to Agreement Form "G" heretofore used by the Board.

$750,000 PORTLAND BUILDING

Plans are nearing completion by staff architects of Montgomery Ward and Co. for a nine-story and basement wing addition to the Portland store. According to J. D. Bullock, local manager, about $750,000 will be spent on the improvement which will be started in the near future.

ARCHITECTS NEEDED TO "HUMANIZE" SMALL HOUSE

ACTION by architects to aid mass building of small houses is urged by a committee on site planning and grouping of the New York Chapter of the American Institute of Architects headed by Henry Wright, city planner. To "humanize" the small house, architectural studies of community organization are needed, according to the committee.

"The small house field can be reached and improved only to a limited extent if the efforts of architects are confined merely to the reduction of the cost of plans and the improvement of design," the committee says. "This field has been and will continue to be served mainly by the mass builder who has obvious advantages for economies and methods of large scale financing.

"His failure in the past to produce a more creditable output has been because of his limitations in planning ability and in appreciation of the possibilities of group planning inherent in mass methods. It is therefore believed that one of the most important opportunities for the architectural profession lies in making studies of and suggesting the possibilities of better community organization open to the mass producer."

Mass production of small houses can be relieved of monotony by the simplest means, while preserving the inherent economies, the committee declares. "A staggered frontage is possible in group building but unattainable through individual procedure," it is explained. "The private lane or cul-de-sac has further advantages in both economy and living quality but is less appropriate to a gradual building procedure than to a situation in which it can be completely built up in one process.

"The variations are of the simplest nature, variety being obtained by grouping rather than by trite changes in a uniform elevation. A considerable degree of good orientation may be achieved by merely turning a simple plan. Effective group relations and interesting external appearance is also produced more tellingly than by 'dolling up' the individual house. A better relation of garden to living area in the house is also arranged.

"More subtle and interesting effects can be secured where the plans can be carefully worked out for the use of two or more standard base plans, with, however, uniform kitchen, bath, and stair features. It is considered imperative that all such proposals be of a simple nature to be readily understood by the average type of builder and sales agency in the field.

"Lot lines should not become too complicated, and spaces requiring common maintenance should be avoided or left optional with the builder. On the other hand, builders must be convinced that they have a valuable selling advantage in featuring permanent qualities and livability in place of possible easy turnover and quick profit.

"The American Institute of Architects can aid morally as well as technically by sponsoring the needed reforms in building laws and city planning so as to encourage desirable departures from the ordinary cut-and-dried but extravagant processes of suburban land expansion. Some of the existing wastefulness could be curtailed by altering street patterns, and safety, interest, and quiet could be introduced into residential neighborhoods.

"As a better understanding on the part of both the architect and the builder is developed, the latter will naturally bring in his problems to the individual architect for solution. Architectural studies with the encouragement of the Federal Housing Administration, should do much to humanize the small house in our midst."

Discussing site costs, the committee states that lots with completely developed improvements will average not less than thirty dollars per foot with the normal street plan and without speculative profit.

"Lower costs may at times be available through sacrifice or where less complete improvements are required or in smaller cities. It is considered desirable to include with even such inexpensive houses more land than is customarily offered by the large builder. A fifty-foot lot of from 5,000 to 6,500 square feet, depending upon depth, is, however, somewhat overgenerous and out of proportion to the house cost proposed.

"Fifty feet for the width of the lot is essential to a good standard of spacing on the basis of a uniform set-back. Certain simple departures from such set-back can, however, be suggested which would add to the appearance of the neighborhood and reduce the average frontage to forty feet, or $1,200 for the lot with complete public and basic lot improvements. A further saving of perhaps $200 might be had through the possibilities of

narrow roadways and less expensive pavements in minor streets and cul-de-sacs."

The committee, in addition to Mr. Wright, was composed of J. Andre Fouilhoux, John Theodore Haneman, and Frederick G. Frost, winners in the New York Chapter's recent low cost house competition, in which first and fourth prizes were awarded to Mr. Fouilhoux for his design of a home aimed to meet the needs of 75 per cent of the nation's population. The committee's report was based upon a study of the forty-one designs submitted by thirty-two architects.

HARDWARE IN MODERNIZATION

As modernization sweeps in expanding volume over the country, it finds a strong base in hardware. Classification of jobs undertaken shows hardware in practically every one. Work listed as redecorating, exterior repairs, outside painting with its inevitable scaffolding, remodeling generally, interior repairs, reconstructing bathrooms and kitchens, addition of rooms, all calls for articles manufactured by the hardware industry. More specifically analyzing this work, which is running into the hundreds of millions of dollars, we find average percentages of total to be: — heating, 17.71; redecoraing interiors, 15.30; plumbing, 11.74; exterior repairs, 9.86; painting outside, 9.70; roofing, 9.61; general remodeling, 7.02; interior repairs, 6.61; cementing 3.84; lighting, 2.90; additional rooms, 2.19; bathroom remodeling, 2.15; kitchen remodeling, 1.12; miscellaneous, 0.25. One manufacturer, who has offered credit to property owners, has uncovered a fact of tremendous bearing on the final outcome of the better housing movement. He says only $1 of every $6 spent on home improvements is credit money. This shows home owners are using their savings. As savings bank deposits have increased steadily in the past few years, this tendency to use savings for home investment argues for continued expansion of such operations. And they all call for more hardware. — Condensed from *Hardware World* by *Real Estate Digest*.

CITY-COUNTY BUILDING

Richard S. Requa, William Templeton Johnson, Louis Gill and Sam W. Hammill, architects, all of San Diego, are preparing plans for a city-county office building to be built in the new civic center at the foot of Ash Street in San Diego, a WPA project. J. H. Davies, Ocean Center Building, Long Beach, is the structural engineer. The building will be a two-story and part three-story reinforced concrete structure with a steel frame tower. Estimated cost is $1,000,000.

WESTINGHOUSE GOLDEN JUBILEE

Fifty years of progress and usefulness were the key notes of the golden anniversary of the Westinghouse Electric and Manufacturing Company celebrated by its 43,000 employees and friends, January eighth. In all the principal cities where the company maintains executive offices or plants, the employees gathered around the festive board to listen to a nation-wide hook-up of an address by A. W. Robertson, Chairman of the Board of the Westinghouse Electric and Manufacturing Company. Mr. Robertson was introduced by F. A. Merrick, president of the company.

The banquet here was held at the Hotel Oakland, and was attended by approximately five hundred people. W. R. Marshall, vice-president, presided. The program included music and informal talks, concluding with two interesting moving picture reels.

During the fifty years of the company's corporate existence many advanced engineering projects have been successfully achieved. The record starts in 1886 with the development of a transformer which made possible the whole alternating current system and ended in 1935 with the construction, for the Boulder Dam, of two of the largest water wheel generators in the world.

During the past year, the company also equipped the New York, New Haven and Hartford Railroad's stream-lined train "Comet" with Diesel engines and electrical equipment throughout. Continued progress this year may be looked for from Westinghouse engineering and research activities. Highly trained scientists and technicians may be expected to uncover new secrets to be crystalized into epic-making applications of electricity to all complex activities of modern life.

TO MODERNIZE 80 BUILDINGS

Messrs. A. R. Walker and P. A. Eisen, 708 Pacific Commerce Building, Los Angeles, have been retained by the North Vermont Avenue Improvement Association, in an advisory and consulting capacity, to design a general community scheme for proposed improvements to buildings on North Vermont Avenue, between Franklin Avenue and Los Feliz Boulevard. Between 75 and 80 buildings, with a total frontage of 1960 feet, are involved in the project. Estimated cost of the improvements is $2,500,000. The association, headed by Frank H. Partridge, has requested the Los Angeles Planning Commission to rezone the property.

JOHN PARKINSON,

The death of John Parkinson, for many years one of the leading architects of the west, occurred at his home, 1201 San Vicente Boulevard, Los Angeles, December 9, of a heart attack.

In the 46 years he practiced architecture, first in Seattle and later in Los Angeles, Mr. Parkinson designed several hundred buildings, most of them commercial structures. His contribution to the business and industrial development of Los Angeles, is familiar to many.

John Parkinson was born in Scorton, Lancashire, England, December 21, 1861. He attended school and received his first training in building construction and design at Bolton. When he reached his majority he came to America spending a short time in Winnipeg, Canada, and Minneapolis, Minnesota.

In 1889 Mr. Parkinson went to Seattle, Washington, and opened an office, designing many buildings in that city and vicinity. It was there in 1889 he met Weymouth Crowell, who later became a successful Los Angeles contractor and who erected several of the first structures for which Mr. Parkinson was architect. There also was formed the brief partnership of Parkinson & Evers, terminated by Mr. Parkinson buying his partner's interest in the business. In 1891 Mr. Parkinson was appointed city school architect and in the next few years he designed a score of school buildings for Seattle and surrounding communities.

In 1894 Mr. Parkinson settled in Los Angeles and opened an office for practice of architecture. His first commission was designing the Currier Building on Third Street, between Broadway and Spring, in which he maintained an office for a number of years. Later, in 1896, he designed the Homer Laughlin building on Broadway, just south of Third Street, which was the first steel frame fireproof building in Los Angeles.

From 1905 to 1915 Mr. Parkinson practiced in partnership with Edwin Bergstrom under the firm name, Parkinson & Bergstrom, the latter retiring from the firm on the expiration of their partnership agreement.

During the depression, following the war, Mr. Parkinson was commissioned as architect for the Los Angeles Union Terminal buildings, a group of large reinforced concrete structures which cost around $7,000,000. He was also architect for the original Los Angeles Coliseum, which seated 75,000 and later for the enlarged Coliseum which now seats 105,000.

Mr. Parkinson's son, Donald B. Parkinson, was taken into the firm in 1920, and in recent years the responsibilities of the business were gradually transferred to him. Among the notable structures designed by John Parkinson & Donald B. Parkinson are the following: Federal Reserve Bank, Los Angeles Gas & Electric Building, Title Insurance Building, Title Guarantee Building, Bullock's Wilshire, J. D. Spreckels Building, San Diego; Wilshire Medical Building, Banks-Huntley Building, Harry Bauer Building, Union Depot, Ogden, Utah; Broadway Department Store; First National Banks of Beverly Hills, Santa Barbara and Long Beach; Elks Club and Security Bank, Santa Barbara; six buildings at University of Southern California—administration, law, science, Students' Union, Bridge Hall, physical education building.

Mr. Parkinson took an active interest in civic affairs. While in Seattle he assisted in drafting a new building ordinance for that city and was a member of the commission which drafted a new building code for Los Angeles in 1900. He was a former member of the Los Angeles Municipal Art Commission and a life member of the American Institute of Architects.

WILLIAM H. WHARFF

At the age of ninety-nine, William H. Wharff, pioneer architect of Berkeley, passed away at his home in that city, New Year's Day. Mr. Wharff was the architect of the Berkeley Masonic Temple built nearly fifty years ago. He was a native of Gifford, Maine, and came to California in the seventies. He served in the Civil War and knew Lincoln. He founded the Lincoln Fellowship and was a charter member of Lincoln Post, G.A.R. He was said to have been the oldest living member of the G.A.R. Mr. Wharff had been a Mason since 1870.

AUGUST NORDIN

The death of August Nordin, architect, occurred at the University of California Hospital, San Francisco, January eighth. Mr. Nordin's death followed a heart attack. He was 67. During his practice in San Francisco, he designed more than 300 structures, the most recent being the Foshay Building on Kearny Street, San Francisco. Mr. Nordin was a member of Islam Temple Shrine and the Scottish Rite.

WORK RELIEF PROJECTS

A treasury warrant for $3,217,300 has been countersigned to permit the Works Progress Administration to direct work-relief assistance to educational, professional and clerical persons by carrying out the following types of projects:

(1) A nation-wide survey of state and local historical records.

(2) A nation-wide survey of Federal archives.

(3) A survey in 31 states to obtain exact measured drawings and photographic records of important examples of American architecture.

(4) A survey in 27 states to obtain and compile historical data pertaining to design, construction and usage of vessels formerly a part of the United States Merchant Marine. Records of drawings and photographs of these vessels will be placed in the National Museum.

In addition, a general inspection will be carried out in all Federal Government-owned buildings in New York City and Detroit. Bacteriological tests of water supplies of these cities will be made and the use of dyes will be employed to trace any suspected pollutions. Of the total allotment, $182,500 will be devoted to this program, of which New York City will receive $163,784 and Detroit, $19,716.

Under the survey of state and local historical records, lists will be made of records now in the hands of state, county and local governments as well as those available from historical societies and accessable individuals. All data will be compiled into a master inventory and will be deposited with appropriate Federal agencies. Allocations to the western states for this survey are as follows: Arizona, $6,000; California, $80,000; Colorado, $12,000; Idaho, $4,600; Montana, $6,000; Nevada, $2,000; New Mexico, $6,000; Oregon, $9,400; Utah, $5,000; Washington, $20,200; Wyoming, $3,000.

The archive survey will be carried forward as distinct from that which can be carried in the budget for the National Archives. The volume and department of origin and the exact location of archives will be ascertained and the relation to the standard archival serials of the affected government departments will be shown. In addition, reports under which archives are kept and the determination whether better provisions can be made for the preservation of records will be studied. Appropriations for the western states are the same as for the historical records survey except that Washington is allotted $16,800.

The third survey, that of American architecture, will be made in only 30 states, California being allotted $22,000, Oregon $7,000, and Washington $7,000.

Under the fourth survey, collection of data and photographs of vessels formerly used in the U. S. Marine, California will receive $9,000, Oregon $3,000 and Washington $9,000.

S. F. ARCHITECTURAL CLUB

Walter C. Clifford is the new president of the San Francisco Architectural Club, with Walter Ruppel, vice-president, and Richard Audsley, secretary.

The following committee chairmen have been named: Walter Ruppel, entertainment; Frank Trabucco, publications, and Richard Audsley, publicity. Otto Hintermann is a new trustee and Chas. Conti, director.

Retiring President Hintermann is recipient of a past president's charm, bearing the insignia of the San Francisco Architectural Club.

DESIRES CATALOGUES

The firm of HERBERT & CAULKINS, architects of Santa Rosa, announces a dissolution of partnership and C. A. Caulkins, Jr., will continue the practice of the profession with an office at 426 Rosenberg Building, Santa Rosa. Mr. Caulkins would like to receive manufacturers catalogues and building material samples from San Francisco firms.

REVISED BOOK ON STUCCO

"Portland Cement Stucco" in its revised form should serve as a welcome addition to the library of the builder, architect and home owner.

This edition has complete instructions on how to produce a variety of stucco textures, each step illustrated by photographs and the final texture reproduced in full color.

Throughout the book are pictures of attractive houses finished in Portland cement stucco. These range from thirty years of age to the modern style of today—from a cottage to the towering Edgewater Beach Hotel. Modernizing is also discussed and "before and after" pictures are included.

A full set of specifications for the proper application of Portland cement stucco both on new and old buildings completes the story.

With the Architects

BUSY ON RESIDENCE WORK

New work in the office of Edwin L. Snyder, 2101 Addison Street, Berkeley, includes a $12,000 brick veneer dwelling on Alvarado Road, Berkeley; a $7,000 house in Rockridge, Oakland; a brick veneer house in College Park, Sacramento, a Monterey-Colonial dwelling in Berkeley for A. T. Beckett, and three houses on Grizzly Peak Boulevard, Berkeley, for Randolph F. Parks.

MEDICO DENTAL BUILDING

Plans have been completed for a two-story medico-dental building to be built on Bancroft Way, near Telegraph Avenue, Berkeley, and to be leased to a number of physicians and dentists in the University City. The owner of the property is Mrs. E. L. Turner, the architect Julia Morgan, and the builder, H. K. Henderson.

MILLER AND WARNECKE BUSY

Miller and Warnecke, Financial Center Building, Oakland, report activity on several houses in the East Bay; also another Class C store building on Lakeshore Avenue, Oakland. A recent contract to be awarded in this office is a $6,200 house for Carrell Weaver on Ocean View Drive, Oakland.

DUPLEX MUNICIPAL RESIDENCE

The City of Vallejo is the owner of a two-story frame and stucco duplex residence to be constructed on the reservoir site, three miles out of Vallejo for employees of the Water Department. There will also be a garage and laboratory, the total cost being estimated at $12,000.

AWARDED RESIDENCE CONTRACT

William Martin, 666 Mission Street, San Francisco, has been awarded a contract to make alterations to the residence of Dr. Randolph Flood, 3055 Divisadero Street, San Francisco. Farr and Ward, 68 Post Street, San Francisco, are the architects.

CALIFORNIA-COLONIAL RESIDENCE

A two-story and basement California-Colonial residence has been designed by F. L. Confer, architect, 2812 Russell Street, Berkeley, for M. Stracham of the Hotel Harrison, Oakland. The house is to be built in Piedmont Pines, Oakland.

PERSONAL

Francis W. Grant, who has been construction superintendent for John Graham, Dexter Horton Building, Seattle, for the past 13 years, was recently appointed PWA resident engineer and inspector to supervise work on six construction projects at Medical Lake and Cheney, Washington.

S. Lee Hinman, architect, who has been affiliated with the Clise interests as building manager for the past several years, is resuming professional practice, becoming associate architect on the staff of Graham and Painter, Ltd., Dexter Horton Building, Seattle.

William R. Grant, architect of commercial buildings, is now occupying a new office at 312 Lloyd Building, Seattle.

Walter F. Fuesler, has moved his office from 615 Architects' Building to 539 No. Mansfield Avenue, Los Angeles.

Edgar F. Bissantz has moved from 1101 Architects' Building, Los Angeles, to larger quarters, suite 912, in the same building.

Louis L. Dorr has moved his office from 1107 Signal Oil Building to 906 Architects' Building, Los Angeles.

Howard H. Riley, architect, has resumed practice, his office being in the Joseph Vance Building, Seattle. At present he is devoting his attention to small house design.

B. Dudley Stuart is now occupying an office suite on the sixth floor of the Thompson Building, Seattle. He has several commercial projects under consideration, and has been consistently active in modernizing work.

Messrs. Nordin and Anderson, architects of Los Angeles, have moved from the Transamerica Building to 422-25 Insurance Exchange Building, that city.

Gordon B. Kaufmann has moved to 627 South Carondalet Street, Los Angeles, where he is occupying attractive new offices.

William H. Rabe, assistant city engineer at Ventura, has recently been granted a permit to practice as a structural engineer by the California State Board of Registration of Civil Engineers. The City of Ventura has lately accepted the uniform building code.

SOUTHERN CALIFORNIA CHAPTER

Officers for 1936 have been elected by Southern California Chapter, A.I.A., as follows: Ralph C. Flewelling, president; Eugene Weston, Jr., vice-president; George J. Adams, secretary, and Samuel E. Lunden, treasurer. S. B. Marston was elected director of the three-year term. Henry Carlton Newton and Reginald D. Johnson are the hold-over directors.

Delegates to the Institute convention to be held in Williamsburg, Va., next year, were elected as follows: Carleton M. Winslow, J. E. Allison, A. M. Edelman, H. C. Chambers and Robert Orr. Alternates are: Eugene Weston, Jr., A. C. Zimmerman, Roland Coate, Samuel E. Lunden and Reginald D. Johnson.

Sumner Spaulding, who presided at the December meeting, announced that the January meeting would be in the nature of a memorial to the late John Parkinson.

A vote has been taken by letter ballot on the question of issuing a life membership in the Chapter to A. M. Edelman, only surviving charter member. Presentation of the certificate was made at the January meeting, when Mr. Edelman read the minutes of the first Chapter meeting.

Designs or pictures of executed buildings related to sport activities which will be selected for the American section of the international competitive exhibition of the 1936 Olympiad should be directed to Richard J. Neutra, Los Angeles, member of the architectural committee.

NOT SO GOOD

A recent Associated Press dispatch from Washington, D. C., states that "the Federal Home Loan Bank is considering establishing an architectural service for home builders. Officials declare that the service would be available to builders from Savings and Loan Associations, and other members of the bank system." Does this mean another architectural bureau to compete with individual practitioners?

MERCED BUILDING ACTIVITY

The new year started with considerable building activity in Merced, including construction of a new wing to replace a portion of the El Capitan Hotel, damaged by fire; a physicians' and dentists' building at 19th and L Streets for Dr. Bruce E. McConnell and associates, and reconstruction of a warehouse and office building for the Yosemite Portland Cement Company, damaged by fire last year.

MARTIN J. RIST BUSY

In addition to a group of houses in San Jose, Martin J. Rist, Phelan Building, San Francisco, is busy on plans for a prospective hospital and has completed drawings for a two-story and basement market and office building on Columbus Avenue and Green Street, San Francisco.

BUSY ON RESIDENCE WORK

Henry H. Gutterson, 526 Powell Street, San Francisco, reports that his office is busy designing several dwellings, one in Ross, Marin County, and the others in the San Mateo Peninsula District.

COUNTY COURT HOUSE

Working drawings have been completed for a Class A Court House at Salinas, estimated to cost $450,000. Charles A. Butner and Robert Stanton, Salinas and Pebble Beach, are the architects.

MODERN PIEDMONT DWELLING

Michael Goodman, 2163 Center Street, Berkeley, has completed plans for a modern style residence to be built in Piedmont, features to include brick glass and air conditioned heat.

HOTEL ON MT. HOOD

Construction of a hotel on the slope of Mt. Hood has received WPA approval. An all-year round hotel to accommodate 300 is planned. The hotel will be 62 miles from Portland via Mt. Hood Loop Highway and Government Camp.

SAN FRANCISCO CONVENT

John J. Foley, 770 Fifth Avenue, San Francisco, has prepared plans for a two-story reinforced concrete convent for Sacred Heart Parish to be built on Oak Street, east of Fillmore, San Francisco, at an estimated cost of $60,000.

PALO ALTO STORE BUILDING

Messrs. Farr and Ward, 68 Post Street, San Francisco, have awarded a contract for construction of a one-story reinforced concrete store building in Palo Alto for the A. B. Morton Company. The building will cost $12,000.

CIVIC AUDITORIUM

Eureka, Humboldt County, is to have a new civic auditorium, costing $120,000. Plans were prepared by Franklyn T. Georgeson, of Eureka, and W. H. Ellison, structural engineer.

PASO ROBLES GYMNASIUM

A $36,000 gymnasium is planned for the Paso Robles High School. Preliminary drawings have been made by Orville L. Clark, 369 North Ridgewood Place, Los Angeles.

FEDERAL GOVERNMENT SEEKS CO-OPERATION OF INSTITUTE

Urging the use of "every technical and artistic resource," the American Institute of Architects has pledged its aid to Federal, state and municipal governments in creating a public architecture which will advance the cultural standards of the nation, it is announced by Stephen F. Voorhees of New York, president of the Institute.

The Institute, through its officers, Chapters and committee on public works, is ready to co-operate "in the development of methods and policies for improving and perfecting the planning, design and construction of government buildings," and has so informed President Roosevelt, the appropriate committees of Congress, and the heads of the departments and independent agencies of the government concerned with the planning of government structures, according to Mr. Voorhees.

"The Institute's offer of advice and co-operation is made in a spirit of patriotic service and of intelligent and sympathetic understanding of the difficulties and problems with which they are faced," Mr. Voorhees said. "It is in the interest of the public that all government buildings should represent and embody the highest standard of architectural design, taking into account all aesthetic, all practical, and economic considerations."

Mr. Voorhees made public a report of the Institute's committee on public works, of which Francis P. Sullivan of Washington is chairman, which asserts that "the government is in a unique position to perform a service of education for its citizens of distinct advantage to the intellectual life of the nation."

"No architecture is appropriate for any building in which even the least important of the many activities of our nation's government is housed, except an architecture that is great and noble and inspiring, presenting to the citizen an outward expression of the dignity, the nobility and the greatness of his country in which he takes pride," the report declares.

"Just as the average citizen's blood is stirred by the flag flying over a body of troops or the review of a great fleet of war vessels, he feels inspired by the dome of the Capitol rising over the headquarters of the nation's government and by the refined beauty and historic significance of the White House. He is similarly inspired in a greater or less degree by the government in all its manifestations when these are dignified and worthy, so that there would be a distinct loss to the spiritual and patriotic relation between the citizen and the government if its activities were carried on in bare warehouses without architectural significance or dignity, constructed as cheaply and as shoddily as the average speculative structure.

"The government is also in a unique position to perform a service of education for its citizens of distinct advantage to the intellectual life of the nation. That is to hold up before the people a high standard of excellence both in design and craftsmanship, utilizing for this purpose every aesthetic and technical resource of the nation, so that every citizen may have the opportunity of becoming familiar with good architecture, good painting and good sculpture and so that the cultural standards of the people as a whole may be continually improved.

"There are two great emotions that in the past have inspired artists to accomplish things almost beyond their power; the sentiment of religion and the sentiment of patriotism. Religious fervor has raised great cathedrals the very sight of which stirs the capacity for reverence and awe, and the love of country in past ages has expressed itself in monuments which we cannot see today without feeling the warmth of sentiment that brought them into being. The government owes it to its citizens to guide this depth of feeling into worthy channels."

The report describes the relationship which should exist between the architectural profession as represented by the Institute and the government, saying:

"The government has a right to receive and its citizens have a right to demand that it require and insist upon the highest type of architectural service available. The architecture of the public buildings should represent the best which the highest talent of the country is capable of producing.

"The architects of this country as the professional body of men whose education, whose training and whose whole lives have been devoted to this field are the men best qualified to advise the government as to how this end can be achieved.

"When the appropriate means for accomplishing this end have been determined, these and these alone are what architects should advocate, and if in any instance personal interest should come in conflict with the common good, it is the architects' interest and not the general welfare of the country that must be postponed.

"In order to accomplish any useful and beneficial result, architects must begin and go forward in a spirit of helpful co-operation, with a complete and sympathetic understanding of the point of view of the administrative officers of the government and the many conflicting demands which they are forced to take into account, and of restrictions of law, of procedure and of policy."

HIGH COST OF IGNORING SAFETY FIRST RULES

By C. G. Chipchase

WHY do some employees trained in "safety" overlook or forget the simple principles of "safety first" when they leave their places of employment for the night or over the week end? There are any number of such cases, trained workers having accidents while off duty, involving members of their families, friends, and others, at home, on the highway, or in their other pastime activities.

Accidents are caused mostly by the failure of some person or machine to perform work in a proper manner. A great many machine failures can be prevented by previous inspection and maintenance, but the ultimate power to prevent man-failure lies with the man himself.

A man must be more than just a good workman to be efficient, for if he is to maintain that efficiency he must be a safe worker. I would not give a cent for a man who worked without regard to safety. Even if he worked without pay and was fortunate in not having an accident, he would still be a liability instead of an asset, for his influence on his fellow employees would destroy the safety morale of the organization.

In modern industry, the habitually unsafe worker is simply not wanted. There is no place for him. To quote the words of a prominent executive: "If we know our job we will not have accidents," so let's get acquainted with our jobs. It, therefore, follows, to be successful with our work or our pastime activities, we must not only work with our hands, but use our heads also. If a thinking man will do his work in his place of employment or at home efficiently and safely, his reward will surely come.

Much has been said about safe practices at the factory or other places of employment and with all the teaching and lessons learned through bitter experiences you would think that the "safety mindedness" of the great majority would be more pronounced, but when one stops to consider the large number of traffic accidents involving automobile, the pedestrian, passenger buses, etc., and home accidents, which are more numerous and just as fatal as industrial accidents, you sometimes wonder if the participant ever heard of "safety."

The old adage "self preservation is the first law of nature" and the foundation of safety seems to have lost all of its old significance, especially when traffic accidents in all parts of the country hold the lime light so constantly, and home and off-duty accidents are running a close second.

The following narrative seems to have a place in this article. It is about an accident in which I had first-hand information; it concerns the non-observance of "safe practices" when off duty or when not under the influence of safety regulations in industry.

The victim in the case, when occupied by his regular employment, was an electrician and lineman employed by a large power company as an artisan. He was first-class, receiving top wages and was constantly employed. I know that he received, with others, good safety instructions from the company's safety engineer and its foreman. This information was verified by the employee to me; he knew all the "safe practices" and "first-aid procedures" that any efficient employee should know. This person had a pastime interest in a small farm which was located about one hour's drive from his permanent town home. He spent many hours working on the place during his spare time. When his crop was ready for harvest he spent a vacation period there to harvest the crop and prepare it for market.

In the process of preparation he used a hulling machine which was driven by a three-horsepower electric motor, belted to the low-down jack shaft of the machine, which he did not provide with a proper guard. There were other hazardous exposures which were not protected, but he felt he knew of their existence and that he would be cautious of them and thus protect himself against accidents.

The vacation period came; he and his family moved out to the farm, here they enjoyed the freedom of country life, all had good health, good appetites and plenty of food, including the wine of the countryside. This man imbibed freely; in fact, excessively of the wine. His wife forbade him against this excessiveness. She was concerned about his automobile driving, fearful he would endanger others on the highway or bring disaster upon himself, which was all good and timely on her part, but no thought was given to the hulling machine.

The safety instructions given him by his employers included directions not to wear loose clothing, shirt sleeves unbuttoned flying in the breeze, etc., but to wear short sleeves or rolled up sleeves, so that they would not catch in moving parts of machinery. Here is where he made his mistake; his neighbors cautioned him to stop his drinking if he intended to work around the huller or he

LACK OF LIGHT AND AIR BLIGHTS HOUSING VALUES

Failure to recognize the economic value of light and air has been the greatest single and fundamental error in the production of housing units for sale, according to William Stanley Parker, Fellow of the American Institute of Architects.

"I am not referring to the aesthetic and social values of light and air but to their cold, hard boiled financial value," Mr. Parker explains. "The real estate expert and businessman of the time, with nothing much but dollars and cents in mind, wholly failed to gauge this underlying economic asset.

"This is not so strange in the real estate broker with current sales primarily in mind, but it is more significant in the loaning agencies presumably interested in long term investment values back of their mortgages."

Progress that has been made toward greater light and air in low-rental housing units Mr. Parker credits to social agencies fighting for improved living conditions, while real estate interests were concerned chiefly with immediate sales.

"During the early portion of the past half century various forces were impelling the development of areas of low-rental housing units with regard solely to their immediate marketability," he points out. "The producers of these housing units were not concerned with problems of city planning and the development of desirable neighborhoods. Neither was the community at large. Social agencies were concerned, and various individuals and groups face to face with the living conditions being created were fighting for more light, air and sanitation.

"Building laws, step by step and slowly, reflected this pressure with improved minimum provisions for courts and coverage which immediately became maximum provisions in the eyes of the speculative builder of low cost housing. In Boston a first enactment of a requirement for a ten foot rear yard to every tenement house illustrates a step that when taken was progressive if not revolutionary but which now is seen to have legalized wholly undesirable conditions.

"This thought should give us pause today, as we now look back on many similar inadequate minimum provisions, when we attempt to determine any new legal minima with which to control future low rental housing."

Crowded tenements resulted from this early shortsightedness and, Mr. Parker adds, "the same failure is visible today in small house developments where the houses are being placed too close together."

In the type of housing selected for a site, as well as in the matter of light and air, he urges that the needs of the families be considered. Eliminating the two-family house which he believes better for investment than for rental, Mr. Parker limits the choice in large scale rental operations to three types—the single free-standing house, the row house and the multi-family dwelling.

"Conferences can continue to debate the relative values of these types," he says, "but housing authorities and their architects and other advisers must make specific decisions on each point in the light of the special conditions connected with a given site. Here they meet the necessity for the various compromises always inherent in a building operation due to special local conditions and differences of opinion.

"A construction program necessitates keeping one's feet on the ground, and on the particular piece of ground that constitutes the site of the project. In doing this, local statistics require careful study and yet cannot be accepted too rapidly as proof of what sort of housing units are needed. The existing units were provided not because they were right and desirable or actually desired, but because they were being built and bought or rented, and others like them could be marketed at a profit."

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would surely get tangled up in the mechanism. This advice was not well received as you can imagine, but one day when he was going over the machine, turning down the grease cups and oiling up after the noon hour, while the huller was under power, his shirt sleeve on the right arm was caught in the bite of the pulley on the jack shaft. His arm was twisted and torn badly. When he gained consciousness at the hospital some twenty miles away a few hours later, he learned the sad news—his arm had to be amputated at the shoulder.

His earning power as an electrician had vanished and what little savings he had went for medical aid. Later he said: "It was my own fault. I knew better, and with all the training we've had at the company's expense, I had to throw it to the 'four winds' only to bring a burden to myself and to my family."

While the preceding accident seems shocking, there are numerous other happenings around the home and during our leisure time that are just as hazardous and disastrous and are worthy of your close attention.—*California Accident Commission Bulletin.*

ORIGIN OF NAMES OF CALIFORNIA COUNTIES

This is the fourth article in the series giving derivation of the names of California counties, the first appearing in September:

El Dorado—Created February 18, 1850. One of the original twenty-seven counties of California. Francis Orellana, a companion of the adventurer Pizarro, wrote a fictitious account of a wonderful province in South America, of a fabulous region of delightful clime and never-fading verdure, abounding in gold and precious stones, where wine gushed forth from never-ceasing springs, and wheat fields grew ready-baked loaves of bread, and birds already roasted flew among the trees, and nature was filled with harmony and sweetness. From this description, a gold-bearing belt was called El Dorado, as in later days it has been called Klondike. So, when the discovery of gold by James W. Marshall at Coloma in January, 1848, became known to the world, California, and particularly that part where gold was discovered, was called "El Dorado", and it was from this fact that the county was given its name upon its creation.

The county embraces 1,111,680 acres, the El Dorado National Forest covering 251,800, while total timber lands have an acreage of 586,645. For approximately 40 miles the topography changes, ascending to 10,020 feet at Pyramid Peak, then sloping to an altitude of 6225 feet at the Nevada line. Picture a beautiful mountainous country carpeted by almost one sweep of pine forest, with shimmering lakes, including the incomparable Lake Tahoe, and sparkling streams, and you have El Dorado.

General John C. Fremont with a party of pioneers, following directions given by Indians, reached Lake Tahoe February 14, 1844. General Fremont gave the lake the name of his companion traveler, Bonpland, a noted botanist. Later Lake Bonpland was changed to Lake Bigler, in honor of California's third Governor. In 1861 an attempt to change the name to Tula Tulia failed and in 1862 William Henry Knight of Los Angeles, who crossed the plains in 1859, persuaded a group of prominent men to back his efforts to call the lake "Tahoe", an Indian name meaning "big water", or "high water", or "water in a high place". The land office at Washington and the press approved of the name.

Since the day when James Marshall found gold in the tail-race of Captain John Sutter's mill at Coloma, in January, 1848, El Dorado has produced millions in gold. Lumbering holds an outstanding position in industry and labor in the county. In addition it is famed for its Bartlett pears and at Placerville, known as Hangtown in early days, is one of the largest packing sheds in the world. Dairying and livestock are important industries. El Dorado is an internationally famous resort country and it is estimated that 250,000 persons annually drive through the county over the Lincoln Highway connecting San Francisco with Nevada. In Placerville are buildings made of brick manufactured in 1852. There are many villages and towns founded in the gold-rush days which still are in existence. Population: 8,325. Area: 1737 square miles.

Imperial County—Created August 15, 1907. It derived its name from the Imperial Valley, situated therein, and was organized from part of San Diego County.

Imperial, "The Winter Garden of America", has been transformed from a harsh and uninviting desert of cactus and sage brush to a veritable Garden of Eden. Imperial Valley is the largest irrigated district in the world. A great portion of the county, the tenth largest in California, lies below sea level, but in the eastern section are the Chocalate Mountains, and near San Diego county a chain of mountains extends south across the international boundary and are considered among the most picturesque in Southern California.

In ancient times the valley was part of the Gulf of California, later being filled in with deposits and decayed vegetation brought down from the mountains in past ages by the Colorado river, forming a soil to be compared for productiveness with the Nile Valley in Egypt. Salton Sea, covering an area 35 by 14 miles, remained but slowly drying up. More than 515,000 acres are under irrigation in the county and many thousands of additional acres will be cultivated after the completion of Boulder Dam.

Cotton production is an important industry with 22,165 acres now devoted to it. The leading crop is the Imperial Valley cantaloupe with an annual value of approximately $13,000,000 while other melons shipped have an annual valuation of about $9,000,000. Lettuce is in second place as a distinct crop with a valuation of about $11,000,000 a year. Imperial is the tenth cattle-producing county of the state. Dairy products contribute more than $3,000,000 annually. Calexico, the Imperial Valley gateway to Old Mexico, is the port of entry to Lower California. Statistics show that 8,000,000 persons and 2,400,000 automobiles cross the international boundary here annually. El Centro, the county seat, had a population in 1907 of 125; today it boasts 8434. Population: 60,903. Area: 4089 square miles.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

In many instances NRA prices are still in force. Another month may find some material changes in price quotations. A 10% raise is being considered. Amounts quoted are figuring prices and are made up from average quotations furnished by material houses to three leading contracting firms of San Francisco.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $35 to $40 per 1000 laid, (according to class of work).

Face, $75 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.10 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, **$12.00** job cartage. Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Discount 5%.

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Dureflex Floor—23c to 30c sq. ft.

Rubber Tile—50c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.75 per ton
No. 4 rock, at bunkers	1.70 per ton
Elliott top gravel, at bnkrs	2.00 per ton
Washed gravel, at bunkrs	2.00 per ton
Elliott top gravel, at bunkrs	2.00 per ton
City gravel, at bunkers	1.70 per ton
River sand, at bunkers	1.80 per ton
Delivered bank sand	120 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement, $2.25 per bbl. in paper sks.

Cement (f.o.b. Job, S. F.) $3.00 per bbl.

Cement (f.o.b. Job, Oak.) $3.00 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Calaveras White ..... $6.00 per bbl.

Medusa White ..... $8.00 per bbl.

Forms, Labors average 25.00 per M

Average cost of concrete in place, exclusive of forms, 30c pe rcu. ft.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

4½ inch Concrete Basement floor..... 14½c to 16c per sq. ft.

2-inch rat-proofing..... 6½c per sq. ft.

Concrete Steps ..... $1.25 per lin. ft.

Dampproofing and Waterproofing—

Two-coat work, 15c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.00 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $7.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 50 cents; clay or shale, 80c per yard.

Teams, $10.00 per day.

Trucks, $18 to $25 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot. Plate 75c per square foot.

Art, $1.00 up per square foot.

Wire (for skylights), 35c per sq. foot

Obscure glass, 26c square foot.

Note—Add extra for setting

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$32.00 per M
No. 2 common	27.00 per M
Selection O. P. common	36.00 per M
2x4 No. 3 form lumber	22.00 per M
1x4 No. 2 flooring VG	54.00 per M
1x4 No. 3 flooring VG	47.00 per M
1x6 No. 2 flooring VG	54.00 per M
1¼x4 and 6, No. 2 flooring	56.00 per M

Slash grain—

1x4 No. 2 flooring	$40.00 per M
1x4 No. 3 flooring	36.00 per M
No. 1 common run T. & G.	32.00 per M
Lath	6.50 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.00 per bdle.
Redwood, No 2	.80 per bdle.
Red Cedar	.95 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple..... $120.00 M ft.
1 1-16x2¼" T & G Maple ..... 132.00 M ft.
⅞x3½ sq. edge Maple ..... 140.00 M ft.

	13-16x2¼" T&G	⅝x2" T&G	5-16x2" Sq.Ed.
Clr. Otd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Otd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	190.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	5.00
Brownskin Pro-tect-o-mat, 1000 ft. roll	10.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.
Nails, $3.50 base.
Sash weights, $45 per ton.

Millwork—

O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.

Dining room cases, $7.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.

For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	29c per yard
Three-coat work	40c per yard
Cold Water Painting	10c per yard
Whitewashing	4c per yard

Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lbs. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less then 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hat roll channels metal lath	.75
Ceilings with ¾ hat roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Medusa finish, No. 18 gauge wire mesh	2.00

Wood lath, $6.00 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
¾-inch hat roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations. $13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel, average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00. Boise, $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.

Note—Consult with agents.

Tile—Floor, Wainscot, Etc.—(See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestos Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	7.20*
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	$9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	$7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

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Inyo County—Created March 22, 1866. This county got its name from a tribe of Indians who inhabited that part of the Sierra Nevada mountains. The meaning of the word "Inyo" never has been determined.

Although Inyo is the second largest county in the state it is fifty-first in population. Fruitful farming lands, towering mountain ranges and huge desert expanse combine to make it a unique county. Here is located the famed Death Valley, which has taken a heavy toll in human lives and yet in the winter time is one of California's greatest scenic attractions. In summer the temperature reaches 140 degrees, but from October to May the climate is delightful. Here it was that Death Valley Scotty became famous and built the great desert mansion that lures tourists. Good highways extend into the Valley from Barstow to the south and Owens Valley on the west. The county is a mecca for hunters, fishermen, mountain climbers and vacationists and its lakes are beyond compare. Los Angeles obtains its water supply from Owens Valley through an aqueduct 250 miles in length. Mt. Whitney, the highest point in the United States, rises majestically to a height of 14,496 feet, and there are nine mountains over 14,000 feet high and several times that many ranging from 12,000 to 14,000 feet. Population 6,555. Area: 9991 square miles.

Kern County—Created April 2, 1866. This county derived its name from the Kern river, which was named for the lieutenant of that name of General John C. Fremont's third expedition in 1845-47.

With an area about the size of Massachusetts, this county is made up of picturesque mountains, productive valleys and arid deserts. Vast underground resources of petroleum, gas and minerals supply the markets of the world, while enough cotton and wool are produced to clothe 100,000 persons. Varied fruits, field crops, vegetables, live stock and dairy products and scores of manufacturing plants add to the prosperity of Kern.

The mountain area comprises more than 3,000,000 acres, including a portion of the Sequoia and Santa Barbara national forest. The Sierra Nevada on the east and Tehachapi Mountains on the south offer excellent hunting, fishing and camping. The Golden State Highway running from north to south, El Centro Sierra, from Mojave up through eastern Kern to the Inyo-Mono playground, an excellent highway leaving Bakersfield, traversing the Seqouia National Forest and a fine road crossing northwestern Kern in its course to the coast route highway at Paso Robles provide splendid means of seeing this extraordinary county.

Live stock raising is an important industry. Cot-

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ton production is increasing annually, 66,000 acres being now devoted to this product. Kern is well adapted to fruit growing. Oil has been produced in the county for forty years and at present more than 50 per cent of the oil producing area in the state is here. Randsburg, a Mojave Desert town, with a population of 443, is the home of the famous Yellow Aster gold mine, which has produced $18,000,000, and the Kelly mine, also one of California's best gold producers. Population: 82,570. Area: 8003 square miles.

ENGINEERING CONFERENCE

The recent election of officers for the Sixth Midwest Power Engineering Conference assures an organization of power specialists well versed in the dissemination of power information covering the fields of generation, distribution and utilization.

The work of carrying on the program for the meeting scheduled for April 20-24 inclusive at Chicago, is in the hands of the newly elected officers. Headquarters at 308 W. Washington Street, Chicago, are busy on the elaborate program being prepared.

The conference will be sponsored by the local sections and regional divisions of the following:

American Institution of Electrical Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
Edison Electrical Institute
Western Society of Engineers
National Safety Council
American Society of Refrigerating Engineers

Official hotel meeting headquarters will be at the Palmer House, Chicago, where the entire fourth floor has been reserved for meetings, lunches and receptions. Afternoon sessions will be held at the International Amphitheatre where the Midwest Power Show will be held.

JOHN TREANOR

John Treanor, president of the Riverside Portland Cement Company, Los Angeles, met a tragic death on his ranch, eight miles southeast of Warner's Hot Springs, October 20, when he fell from the roof of a barn while trimming some branches from a tree. He was standing on the peak of the roof when his feet slipped and he was hurled 25 feet to the ground, falling upon the heavy pruning shears in his hands, and sustaining a fracture of the skull.

Mr. Treanor, who was 52, had extensive business interests, investing largely in land and irrigation projects in San Diego county. He was president of the San Diego Water Company, San Diego Water Supply Company, Carneros Ranch and Vineyard Company, a director of the Union Bank & Trust Company, Security Title Insurance Company and other corporations.

OLD MISSION TO BE RESTORED

Popular interest in the architecture of old Spanish missions and churches has been stimulated through recent studies by representatives of the National Park Service, Department of the Interior, of seventeenth and eighteenth century edifices in Sonora, Mexico.

Under the leadership of Schofield De Long, with permission from the Mexican Government, a party of six architects and museum specialists visited Magdalena, San Ignacio, Caborca, Oquitoa, Dolores, and other Sonora towns and obtained measured drawings, photographs, and notes of the structures, and will reconstruct the picture of the missions. Their report will guide the museum experts in making exhibits for the Tumacacori Museum and their studies will contribute to the restoration of the courts and buildings of the Tumacacori mission.

Tumacacori, near Tucson, in southern Arizona, is one of the missions originally established by Father Eusebio Francisco Kino, Spanish missionary and explorer.

PITTSBURG HOSPITAL

Financing is under way for a two-story reinforced concrete hospital at Pittsburg, estimated to cost $70,000. Dragon and Schmidts, of Berkeley, are the architects.

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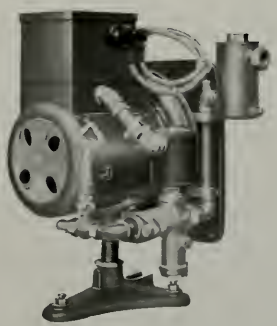

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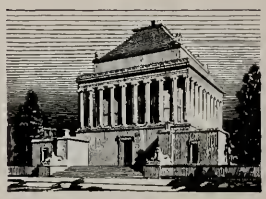

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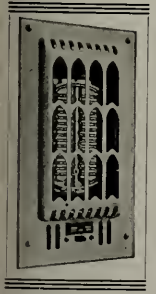

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A Nation-wide census of construction, covering 1935 operations, began January 2. The first census of construction was made in 1929 and has been widely used in connection with the problems of the construction industry. Up-to-date information for this important industry will be available from the 1935 census.

Figures will be secured for the number of persons employed by contractors, man-hours of work in 1935, disbursements for salaries and wages, value of contracts and orders received during 1935, value of construction work performed, and expenditures for materials. In addition, information is to be obtained for the location of the business establishments that are regularly maintained by contractors, the legal form of organization (firm or corporation), and the kind of construction business in which they were engaged during 1935.

To augment the value of the construction statistics, some further information will be collected in detail at the request of the industry. Two sets of figures, for example, will be secured for persons employed. One will give an analysis of employees by broad occupational groups for a stated one-week pay period (that ending nearest October 26 has been designated). The other will present the total count of employees on the 15th of each month of 1935. As to work performed, the schedule form is arranged to show five separate types of construction, further classed as new construction or remodeling, repairs and maintenance. Private construction and public construction are also to be reported separately. With these breakdowns, it will be possible to present a statistical picture of construction activities in sufficient detail to be of real value to the industry.

Such questions as: Why is a construction census being taken? — Why have certain questions

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been covered in the census?—and What is to be done with the census returns when they are received?—are often asked.

The construction census is being taken because of the need for fuller information for construction operations. The industry is of such great importance, measured either in terms of the number of persons that look to it for their livelihood, or by the expenditures it makes for materials and equipment, that its progress and what it is doing concern almost every other industry's plans for the immediate future.

The construction industry employs, in normal times, a very substantial proportion of the total number of American workers. Large sums are disbursed directly for wages and salaries. The expenditures for material and equipment affect many related industries engaged in manufacturing as well as those engaged in transportation. Active construction also means more activity in retail and wholesale trade, transportation and finance.

Construction is recognized as an important element in the economic welfare of the nation. It is a measure of the progress made in providing and maintaining the physical plant needed for production and other commercial purposes, and the structures needed for housing. The results of the census will therefore be of widespread interest.

In designing the report form to be used for the census it would have been very easy to list a large number of questions for the contractors to answer. The policy, however, was to limit the questions to the ones that are of fundamental importance. Valuable assistance in this was secured from a number of the leaders of the construction industry that were available for consultation. It is believed that as a result of this procedure the report form provides for the essential basic facts of the industry, yet is not so

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lengthy as to require an unduly large amount of work on the part of the contractor.

The census tabulations will be of particular interest to the individual contractor for appraising the operations of his own establishment. Figures for the relative cost of labor and material to be shown by classes of work and by trades, for example, will enable the contractor to compare his own results with those of the branch of the industry in which he is interested.

CONTRACTORS' TAX

State Registrar of Contractors William G. Bonelli has announced the release of a Digest of the laws of all the states of the Union licensing or taxing construction contractors. The Digest, prepared under the direction of Assistant Registrar Glen V. Slater, is expected to be of material value to the construction field and particularly to contractors whose operations extend into states other than California.

The study shows that twenty-nine of the states impose no taxes or regulations. The balance of the states have statutes of varying classes, some of which require the examination of contractors with nominal fees, while others impose high taxes but no form of qualification or examination.

Farthest advanced in the field of regulation, according to this report, are Arizona, California and Utah. Both the Arizona and Utah statutes appear to have been based entirely upon the California Act prior to its amendment this year providing for a directional board of seven members from the construction industry.

"The California Act", Registrar Bonelli observes, "gives a wider degree of protection to the public and assistance to the industry, without in any sense of the term being a revenue measure."

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Belief that 1936 will see important revelations in the low-cost home building field was expressed recently by Bennett Chapple, vice-president of The American Rolling Mill Company and chairman of a committee associated with the Purdue Housing Research Foundation.

"The prospective home owner can now get up steam in the boiler for his ride into new environments and new comforts for his home and family," Mr. Chapple said in an interview.

He credited the Federal Housing Administration with working diligently to perfect a reasonable program for government insured borrowing, in order that homes may be purchased on the installment plan. In his opinion, this was the spark needed before any real start could be made.

"With a good reputation for paying his bills, and with a reasonable expectation of steady income, the prospective home owner can borrow eighty per cent of the cost of a new home for $7.43 a thousand per month," Mr. Chapple said.

"One disturbing factor which has held up this opportunity, especially in the lower income racket, is the cost of building houses. The problem resolved itself into one of finding out how to build a house that the working man could afford to own and live in. The challenge went out to architects, building material manufacturers, contractors, real estate men, and home appliance manufacturers.

"One of the most promising of the new ideas," Mr. Chapple said, "is the factory-fabricated steel house. Two different types, the Frameless-Steel house and the Steelox house have emerged from the experimental field and have demonstrated the practicability and economy of their types of construction.

"The year 1935," he said, "represented a time of trial and error,

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of hope and despair, of failure and success, in trying to meet the housing problem, but out of it all has come a stronger and more determined group—those who are sure that 1936 will see important revelations in their chosen field."

BUILDERS' CODE

A code of self-government sponsored by eight employer associations, San Francisco Building Trades Council and the Bay Counties District Council of Carpenters, is still operative in the San Francisco Bay District. The employer associations comprise the master plasterers, sheet metal, heating and piping, tile, mason and electrical contractors, ornamental iron and cabinet manufacturers. None of the general contractor organizations has endorsed the code but individual general contractors will be asked to conform to it in conducting their business, it is stated.

The code is drafted along the lines of the NRA code for the building trades, regulating procedure in bidding and defining unfair trade practices. It will be administered by a board consisting of four employers and four employees. Provision is made for continuance until July 1, 1936, of existing wage agreements.

OIL TERMINAL

Eleven and one-half acres of land at the foot of Walnut Street, Alameda, have been purchased by the Santa Cruz Oil Company from the Anglo - California National Bank, as a site for terminal facilities. In addition to being used as a terminal site, storage facilities for vegetable oils and fish products will be provided. It is also planned to erect an experimental plant for the processing of various substances of this character.

The head office of the Santa Cruz Oil Company is 311 California Street, San Francisco, and the officers include Stanley Hiller, president; J. J. Coney, vice-president, and L. R. Kerdell, treasurer.

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While improvement has marked all divisions of the trade, the most abrupt rise the past year has been in home building. The gradual abatement of the doubling-up of families, the increase in marriages, and the desire for better living conditions, which naturally develops with the general expansion of business, have been the chief contributions to the gain, according to a recent Dun & Bradstreet report.

There has been no important change in building costs, the average being at about the same level as it was a year ago. Lumber prices have been steady, while cement quotations have not risen above the slight advance made at the beginning of the year. Other items, especially plumbing supplies, electrical fixtures, and some hardware items, have been advanced moderately,

The complete insolvency record of builders since 1927, including the eleven months of 1935, as compiled by Dun & Bradstreet, Inc., shows:

FAILURES AMONG BUILDERS

Year	Number	Liabilities
1927	353	$21,712,457
1928	489	27,891,511
1929	555	27,031,089
1930	417	20,263,506
1931	344	22,995,950
1932	497	42,079,919
1933	259	16,464,857
1934	242	11,010,426
1935*	161	6,232,234

(*) January to November, inclusive.

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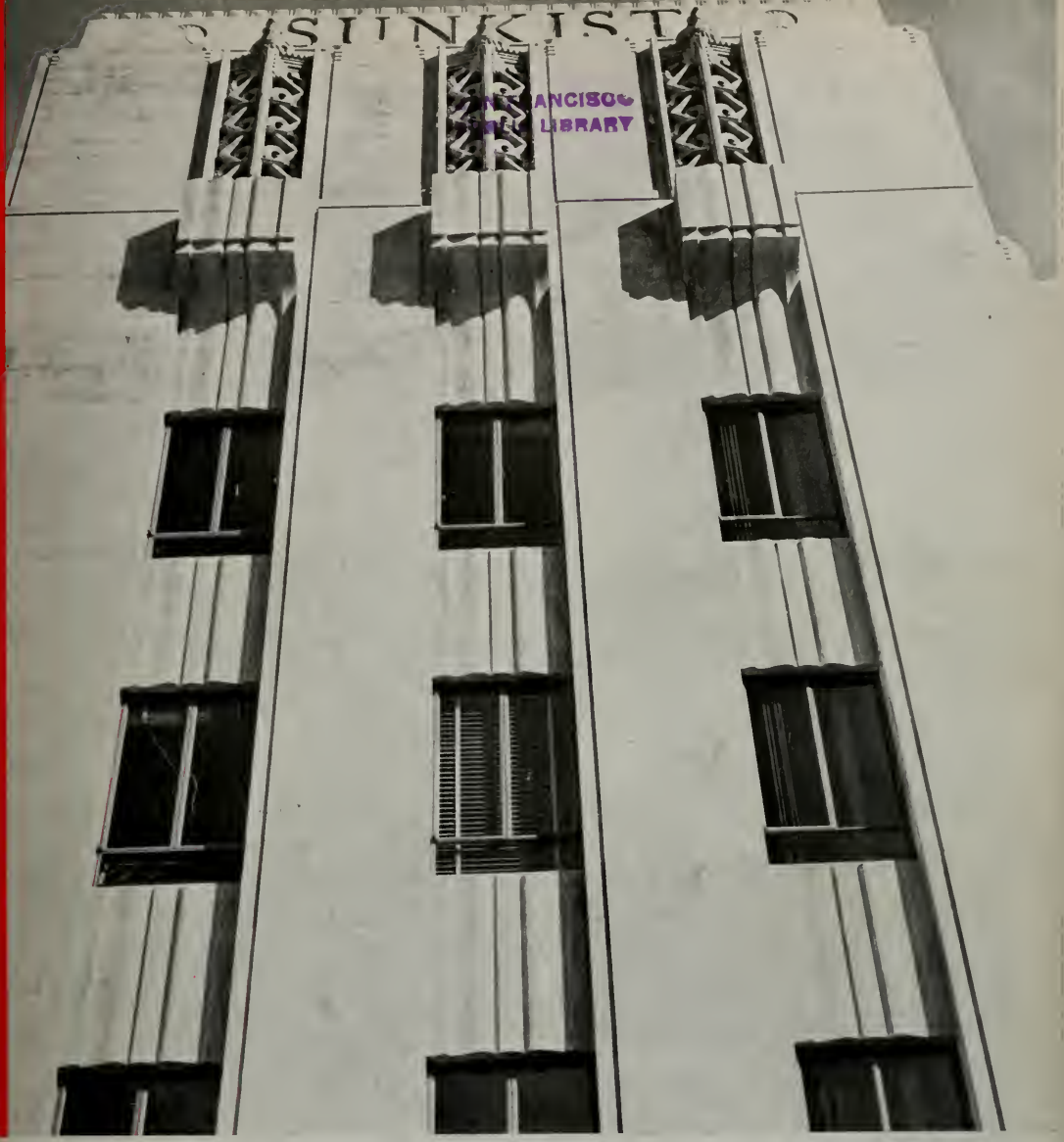

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ALIFORNIA FRUIT GROWERS EXCHANGE

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The
Architect and Engineer
VOLUME 124 NUMBER 2 FEBRUARY 1936

COVER

DETAIL OF SUNKIST BUILDING, CALIFORNIA FRUIT GROWERS EXCHANGE, LOS ANGELES
Walker and Eisen, Architects
Photo by Homer M. Hadley

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DETAIL OF ENTRANCE, SUNKIST BUILDING, LOS ANGELES
Walker and Eisen, Architects

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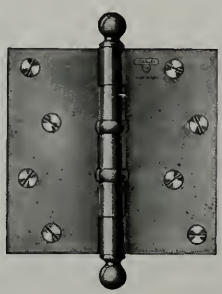

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NOTES AND COMMENTS

SEVEN eminent American architects have accepted the invitation of Russell F. Whitehead, editor of Pencil Points, to act as judges in the Pencil Points-Portland Cement Association architectural competition.

Cash prizes totaling $7,500 are offered for the best designs of firesafe concrete houses.

Two separate problems are involved. One is the design of a concrete house for a family with two children and without a full-time servant, the house to be suitable for a northern climate. The other is to design a house for the same size family, under similar conditions in a southern climate.

According to Mr. Whitehead, besides architectural merit, the designs will be judged from the standpoint of the practicability and economy of construction, the value of the house as an investment during a twenty-year amortization period, and adaptability to concrete construction.

There are two first prizes of $1,500 each; two second prizes of $750, and two third awards of $500 each. There will also be twenty honorable mention awards of $50 in each of the two classes.

The competition is open to all architects and architectural draftsmen in continental United States. Plans must be in the hands of Mr. Whitehead, professional adviser of the competition by March 9.

The judges will be: Atlee B. Ayres, of San Antonio, Texas, who is an authority on Spanish colonial architecture; William D. Crowell, of St. Louis, member of the architectural firm of Mauran, Russell & Crowell; Robert D. Kohn, of New York, a past president of the American Institute of Architects; Carl F. Gould, of Bebb & Gould, Seattle architects; Edmund B. Gilchrist, Philadelphia, noted as an authority on small house and country estate architecture; C. Herrick Hammond, Chicago, a past president of the American Institute of Architects, and Howard Major, of Palm Beach, Florida, designer of many notable buildings in Florida.

LAST MONTH WE REFERRED to the proposed nation-wide architectural competition for a new state capitol at Salem, Oregon. In the meantime several meetings have been held by the Oregon State Capitol Reconstruction Commission which has been authorized to arrange all details. The commission has named Carl F. Gould, of Bebb and Gould, architects of Seattle, Washington, technical adviser, and upon Mr. Gould will rest the exacting task of preparing a program and general information to contestants. Mr. Gould is eminently fitted for the position. No member of the profession in the Pacific Northwest ranks higher. He has been honored by the Washington State Chapter, American Institute of Architects, serving as its president, and the National body also has recognized his high ideals and, besides making him a Fellow, has several times named him on important Executive Committees.

The jury of awards will consist of five—two architects, two members of the commission and one citizen.

The architect members will receive $250 each for their services. Following the receipt of a protest from Oregon architects against the holding of a national competition, the commission stipulated that the contest winner, should he be a non-Oregon resident, must affiliate with an Oregon firm in preparing working plans.

J. A. McLean, Eugene, is chairman of the commission. Alton John Bassett, executive secretary, has opened an office at 714 Porter Building, Portland. Other commission members are: T. Harry Banfield, Portland; Robert W. Sawyer, Bend; George R. Lewis, Pendleton; George A. Marshall, Baker; Dr. Ernest C. Dalton, St. Helens; J. H. Lake, Portland; Mrs. Gordon Voorhies, Medford; Dr. H. H. Olinger, Salem.

AT LAST the Institute has taken a stand on advertising. There can no longer be any question about its attitude toward the publication of brochures containing the work of an architect or firm of architects, made possible by a motly array of advertising. Such publications have been open to much criticism and ethical debate in the past.

That they have taken legitimate advertising away from regularly established architectural magazines (this publication, for example), magazines that are dependent upon the support of the building trade, there can be no reason to doubt. As high as $150 per page has been paid by building material houses and manufacturers, not because they expected to get any new customers from prospective clients who happened to read the advertisements, but because they felt obligated to "do something" for the architect. "Just cold-blooded blackmail," one manufacturer said after placing his firm's signature to a substantial advertising contract following a telephone conversation with the architect who said he "would appreciate the firm's cooperation in making the book a success."

Now, after many years, the Institute has declared itself as looking with disapproval on the publication of the work of its members in any publication supported in any way by advertisements, except in regular magazines, and the Committee on Practice must henceforth consider such practice as unprofessional conduct and so report to the Judiciary Committee the cases brought to the attention of the committee.

Hadley, Photo

DETAIL OF ENTRANCE, SUNKIST BUILDING, LOS ANGELES

WALKER AND EISEN, ARCHITECTS

THE
ARCHITECT & ENGINEER

February, 1936

DETAIL OF ELECTROLIER
SUNKIST BUILDING

NEW HOME OF THE CALIFORNIA FRUIT GROWERS EXCHANGE, LOS ANGELES

by
Homer M. Hadley

RECENTLY completed and only a few weeks occupied, is the new home of the California Fruit Growers Exchange in Los Angeles. The building West Fifth Street, directly opposite Bertram Goodhue's great Public Library. Nearby are the Edison Building and the Los Angeles Biltmore.

The building was planned as a permanent home and headquarters for one of the country's most active and successful cooperatives: that of the citrus fruit growers of California. In a comparatively brief number of years this organization has justified itself both to its members and to its customers, by its enterprise, fair dealing, and notable development of markets for citrus fruits. Who is there in the land unfamiliar with "Sunkist" products? To whom does not that name immediately suggest large and gloriously golden oranges full of the fresh sweet juice that frees the palate of "past regrets and future fears"? It is this new building which henceforth will be the source and origin of the "Sunkist" message to the nation and to the world.

So long as we human beings retain our preference for sunlight and daylight, so long will the problem of floor arrangements in office buildings in general resolve into the familiar three-span solution of a central corridor space between the living and working spaces which adjoin the exterior walls. Such is the floor plan here in a U-shaped building to the exterior of which modern mass effects and vertical lines have been adapted in the manner shown in the accompanying illustrations.

SUNKIST BUILDING, LOS ANGELES
Walker and Eisen, Architects

A special local feature influencing the design of the Sunkist Building is the long and gradually rising retaining wall on the north side of Fifth Street which terminates at Hope Street and which abuts the new building.

It should be stated that the site of the building is at the northwest corner of Fifth and Hope Streets; that Hope Street rises steeply up the hill to the north; that there is about 30 feet difference in grade elevations between the two streets at the intersection and that vehicular connection between them is had by means of a street which parallels and adjoins Fifth Street, descending from Hope Street to a grade connection with Fifth in front of the Edison Building. The retaining wall referred to separates Fifth Street from the connecting street. At its westerly end it has attained a commanding height. Stairs connect the two streets here and the upper flights and landings of the stairs, cantilevered out from the wall, further emphasize and give prominence to it. It is the proximity of this wall and the desirability of avoiding a too abrupt change from its pronounced mass, that led to the treatment adopted for the lower two stories of the Sunkist Building and for the large areas of blank

wall space which there occur. It is not until the third story is reached that the typical character of the occupancy is manifested.

The high ground of Hope Street and at the rear of the building required heavy retaining walls on those sides of the building so the use of the ground story for garage purposes is most appropriate. There are two quite widely separated entrances to the garage off of Fifth Street, midway between which is the main entrance.

This entrance, done in marble and aluminum and lintelled by a large decorative panel, opens into a spacious terrazzo-floored lobby having color-decorated concrete ceiling beams and most pleasingly colored and textured walls. It is a surprise akin to a shock to discover that these soft appearing walls are of concrete! The effect results from having lined the forms with and having poured the concrete against Celotex, the fine textures of which were thereby given to the concrete. Wide horizontal bands of these soft textured surfaces encircle the room, each uniformly colored a soft buff-green pastel shade, delicately varying from the adjoining bands from which it is separated by narrow recessed courses of silver. A most interesting decorative treatment results. At the rear of this lobby are stairs and elevators giving access to the offices above and beyond these entrance is had into the interior of the garage.

SUNKIST BUILDING, LOS ANGELES
Walker and Eisen, Architects

In the second story, centrally located on the Fifth Street side of the building, is the large spacious directors' room where official meetings of the organization are held. Its lighting and ventilation are entirely artificial, there being no window space in this room. The

GARAGE ENTRANCE, SUNKIST BUILDING, LOS ANGELES
Walker and Eisen, Architects

concrete beams of its ceiling are exposed and are decorated in color. Upon its walls are several murals depicting California scenes. Above this room is the open-aired roof garden in the court space created by the U-shape of the upper building. Needless to say particular pains were taken to have a waterproof separation between the garden and the directors.

A most excellent and uniformly high quality of concrete was produced in the Sunkist Building. Not only good intentions but experience, skill, and intelligence are compounded with it. An effort was made to create in every workman an interest in his job and a feeling that his help and coöperation were of real importance in the production of concrete which, when the forms were stripped, would be found sound and without serious blemish. Foremen were charged with responsibility for producing desired results. They had standing orders to

reject any batch of concrete which in their judgment was unsuitable for the work at hand. They were required to make good—not excuses. With walls eight inches thick, reinforced on both faces with double layers of bars inclined at a 45° angle for most effective earthquake bracing, placement was not a simple, easy matter yet it was successfully performed.

The concrete was mixed on the job. With the aggregates known, technical recommendations were obtained for the proportions in which several sands and gravels should be combined to produce a concrete of desired strength and workability. Minor adjustments of these proportions were made from time to time as job conditions necessitated. The average mix was 1-2½-3½ with ¾" maximum size aggregate.

The concrete was tamped and puddled in the forms by hand. After placement was completed, the entire exterior was gone over, any projecting fins were removed, and a colorless surface waterproofing was everywhere applied. The color of the building is simply the natural light grey tone which its concrete possesses.

Wall forms were made of veneer. By using 5-ply thickness, the veneering itself spanned between the vertical studs and carried all construction loads and pressures as well as imparting to the concrete the smooth plane surfaces that were desired. Cut into strips of uniform width, oiled with form oil, carefully wiped off to remove excess oil, these forms were used repeatedly. On each operation the strips were cleaned, oiled and wiped. They were always carefully set in true horizontal position. They produced very pleasing surfaces and the faint lining of the concrete which their edges caused is most successful. There is a suggestion of courses and jointing and an escape from the monotony and sameness with which large plane surfaces of uniform color and texture inevitably are afflicted.

There are several large decorative panels on the exterior of the building. They were cast in waste molds and have details and surfaces which are sharp and clean cut. The large

MURAL DEPICTING EARLY DAYS OF CITRUS INDUSTRY IN CALIFORNIA, SUNKIST BUILDING, LOS ANGELES

By Bowers and Prunier.

panels, Production and Distribution, wherewith the wings of the upper building terminate, were cast in place. The panel over the main entrance was precast and was set in a recess left to receive it. This particular procedure was due to the building being ready and the concrete poured before the waste mold was made.

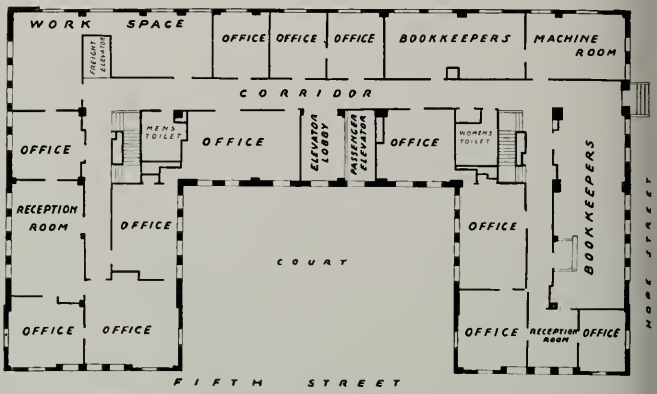
MURAL SYMBOLIC OF CITRUS INDUSTRY ASSEMBLY ROOM, SUNKIST BUILDING, LOS ANGELES

By Bowers and Prunier.

DETAIL SUNKIST BUILDING, LOS ANGELES
Walker and Eisen, Architects

There are several exceptionally fine large precast grilles.

When plans were being drawn for this building, thorough economic analyses was made by the mechanical engineer, Franklin R. Winch, of the various types of heating systems available, using electricity, oil and gas for fuel. A report was prepared and presented to the building committee which decided that the heating system should be planned for the use of gas as a fuel and that



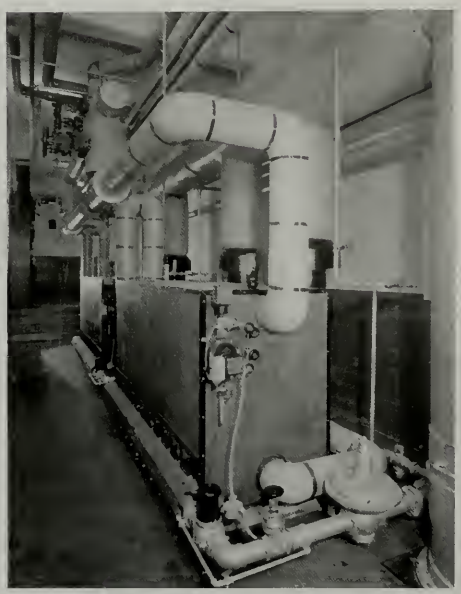
OFFICE PLAN,
SUNKIST BUILDING,
LOS ANGELES

Walker and Eisen,
Architects

Courtesy California Citrograph

the boilers should be particularly designed for gas burning.

Plans and specifications were prepared accordingly. A two-pipe up-feed vacuum heating system serves the cabinet type copper finned coiled radiators for the offices of the upper floors. The various spaces on the lower floors, such as the board room, committee rooms, directors' rooms, etc., are heated, air conditioned and cooled from two central units located in the mechanical equipment room. The heating system has approximately 4200 sq. ft. of direct heating surface and about 2500 sq. ft. of equivalent direct radiation in indirect surface. Capacity of the refrigeration units for air cooling is about 30 tons.



GAS FIRED BOILER PLANT IN SUNKIST BUILDING, LOS ANGELES

The building is of reinforced concrete throughout. Consideration of space needs, of normal structural requirements, of earthquake resistant requirements, or architectural possibilities, of fire resistance — and of the cost thereof—determined the type of construction.

Built of native stone, the $1,200,000 State of Texas Building at the Texas Centennial Exposition, Dallas, will be typical of the nation's largest commonwealth. It will be 488 feet wide and 258 feet deep. Its center, 80 feet high, will house the Niche of Heroes, illustrious figures from Texas history. Its mammoth front wings will be devoted to regional rooms with the Hall of 1836, replica of a Texas mission, and the Hall of 1936 in modernistic style, occupying opposite ends. The building will contain a basement auditorium.

TEXAS CENTENNIAL

A NEW NOTE IN EXPOSITION ARCHITECTURE

by

Jan Isabelle Fortune

"THE Texas Centennial Exposition building program will set a new style which is destined to have a lasting effect upon the future architecture of the world." This was the statement made by Juan B. Larrinaga,* colorist and delineator for the Exposition, at Dallas. And certainly Senor Larrinaga should know, for the Texas Centennial is the third exposition of international importance which has known the sure touch and certain technique of Senor Larrinaga's versatile hands. In 1913 he was assigned to the work of the Panama-Pacific Exposition in San Francisco. In 1934 he was called to San Diego, where he was given the position of designer and art director for the California Pacific International Exposition. Now he is called upon to help the Texans put over their big event.

The Texas Centennial promises to be unlike any other previous exposition in this country. Its background is different — more colorful, more romantic, more splendidly comprehensive, with a wider sweep and scope of time and place. The beginning of Texas ante-dates any on the North American continent. Texas has had so many sources from which to draw her materials: the ancient Spanish, the early Aztec,

*Juan B. Larrinaga was born in the picturesque little village of San Antonio, Lower California, June 15, 1885. His father was Francisco Larrinaga, eldest son of one of the many Spanish colonists who travelled south from San Francisco during the gold rush, colonized and settled in the southern part of the state. In 1898 the elder Larrinaga sent his son into the United States to complete his schooling at old St. Vincent's College in Los Angeles. After school days were over, young Larrinaga tried to clerk in a department store, but found the work too monotonous and uninteresting. He took his meager savings and headed for Old Mexico. Once there he spent his time wandering among the ancient ruins of Aztec civilization; spent hours in the Academia de San Carlos studying the old masters. Back in the United States he joined a touring opera company as interpreter and assistant to the scenic director. His rise to fame thereafter was rapid.

Notable executions by Larrinaga include the Shrine Temple, Los Angeles, all the decorative work for Cecil B. De Mille's "King of Kings," "White Gold,' "The Country Doctor," Douglas Fairbanks' "Gaucho," William Hart's "Tumble-weed," Dolores Del Rio's "Carmen," and many others.

DALLAS SKYLINE FROM WEST CORINTH STREET VIADUCT
Photo by Lloyd M. Young

ARTIST'S CONCEPTION OF TEXAS CENTENNIAL EXPOSITION, DALLAS
George L. Dahl, Centennial Architect

Painting by J. B. Larrinaga

HALL OF VARIED INDUSTRIES, TEXAS CENTENNIAL EXPOSITION
George L. Dahl, Centennial Architect

the Indian, the French, Mexican, Colonial, and modern.

In the Panama-Pacific Exposition at San Francisco, the Spanish motif was used as the theme, and carried out in the architectural design. With this background there was created a colorfully beautiful exposition which dazzled the eye and stirred the senses.

At San Diego, the builders depicted the whole history of Southwestern Architecture with a combination of Pueblo Indian, Aztec, Mayan, Spanish, Colonial Spanish, and ultra-modern. The result was a satisfying, lovely exposition as to beauty of line, form and color.

But the Texas Exposition will be different from both of these, and from all other World's fairs. San Francisco and San Diego were both riots of color. The Texas Exposition will be more subdued, more in harmony with the ultimate purpose of each structure. For there is this difference about the Centennial Exposition—all major exhibit buildings, the various museums of art, horticulture, natural history, and the $1,200,000 Hall of State will be permanent. Only buildings erected by private exhibitors will be of temporary construction.

For this reason, it has behooved the Exposition management to build well for permanency, to attempt by architectural design and artistic treatment to tell the story of what each building will house, and fit the building to its contents.

The result of this need has evolved a new style of architecture, a new trend for the future builders to follow. Out of the Texas Centennial will come an architecture which reflects the cultural development of an empire and its people; an architecture with the feeling of the Aztec expressed in simple lines; an architecture with the touch of the ancient and the classical in the massive pylons and terraced effects; an architecture with the Latin-American feel of romance and golden sunshine; and withal, an architecture that is as modern as Texas is.

The Hall of State, which will dominate the Exposition grounds, will symbolize this new

MAGNOLIA PETROLEUM BUILDING, DALLAS, TEXAS
Alfred G. Bossom, Architect
Topping the Building is a Neon lighted reproduction of Pegasus, the flying horse—the largest neon-lighted sign in the world.

architecture. In fact, the Hall of State will, in my belief, become a symbol of Centennial architecture for the world. Builded on a foundation of native red granite, the building proper fashioned of Texas limestone and marble, ornamented with heroic statuary and colorful murals, this structure will typify modern Texas and her progress, at the same time recalling the glorious history of the past four centuries. Texas is building a Centennial for the world, and the architecture of the future will be colored by it for all time.

MAYA ARCHITECTURE

ARCHITECT-EXPLORER REPLIES TO CRITIC

by

Robert B. Stacy-Judd

IN the August 1935 number of the Architect and Engineer an announcement appeared stating that "in an early issue we shall publish a paper by Mr. Gerhardt Kramer .... on Maya Architecture in Modern Design." Continuing, the announcement informed the reader that Mr. Kramer disagreed with opinions I had expressed in the series of five articles which The ARCHITECT and ENGINEER published during the winter of 1933-4. According to the report, Mr. Kramer said "I do not agree with the opinions of this author. (Refering to myself.) I feel that the architectural profession should be interested in having the correct archeological side of this question presented."

Frankly, I welcome criticism and hope to learn thereby. Although I have devoted approximately fourteen years of my life to a very intensive and almost continuous study of Maya culture, and especially its architecture, I realise that I have yet a great deal to learn on the subject. Anticipating constructive and helpful criticism from Mr. Kramer's articles, or at least an opinion worthy of consideration, my surprise was great when I read in Mr. Kramer's promised article that, with the exception of the somewhat doubtful approval given to the western architects for their "unsuccessful" attempts to adapt Mayan architectural motifs to modern American conditions, the author merely builds up a story in defense of his claim to having solved at least the major problems. His solution is based upon the results of his experiment with a hypothetical project known as a Pan-American Peace Palace.

I shall first consider the portion of Mr. Kramer's article in which he criticises my design for the Aztec Hotel. He says: "On the exterior of the Aztec Hotel in Monrovia, California, an assortment of scrolls have been tossed together and placed on bare wall surfaces where decoration was thought necessary. **The designer has failed utterly in interpreting the symbolism or the craftsmanship of the originals."** (Boldface are mine.)

En passant, I might mention that I have in my possession a souvenir of the delightful two weeks I spent as a guest of Frans Blom, leader of the Tulane Expedition, at the Base Camp at Uxmal, Yucatan. The souvenir consists of a photograph of the Casa de las Monjas at Uxmal, on which is inscribed the names of all the expedition members, including that of Gerhardt Kramer, whom I presume is the author of the article I am now replying to. If my surmise is correct, Mr. Kramer may read in my book, THE ANCIENT MAYAS, a recounting

of considerable happenings at the jungle base camp in which he took part.

The Professor, again if my surmise is correct, will no doubt remember a certain night in March, 1930, when, on top of the Casa de las Monjas in Uxmal, I gave a short talk before the members of the Tulane University Expedition, at which he was present. The Gerhardt Kramer I refer to was at that time an architectural student under Professor J. H. Thompson. On the occasion of which I speak, at the request of Frans Blom, I gave a resume of my practical attempts in adapting Maya art motifs to modern American conditions. At that time I particularly stressed the point that the Aztec Hotel, Monrovia, was purely an experiment, and that at the time I designed the structure I knew practically nothing concerning the symbolic meaning of Maya art motifs. This building, by-the-bye, was designed about thirteen years ago and is credited in every civilized country on earth as the first Maya-motif design to be actually incorporated in a completed structure.

The Aztec Hotel in Southern California

I presume the Professor read my series of articles published in the ARCHITECT and ENGINEER during 1933-4. In which event he could not have failed to note my comments on page 25, of the February 1934 issue of that journal. I wrote, "Not that I considered its (the Aztec Hotel) design indicative of a new style. To me this structure when completed was unintelligible. As a creation it fascinated me. But it lacked reason." This would indicate that Professor Kramer's remarks are not exactly original.

Apparently the article describing my attempt to interpret the Maya art motifs, and the method in which I have endeavored to reconstruct them under modern American conditions, failed utterly to impress the professor. No reference to these items is made in his article, neither does he condescend to comment upon the few later examples of my works.

As the Professor has chosen my first experiment upon which to heap his condemnatory remarks, I believe it is only fair that I quote a few excerpts from writings concerning the subject in question, penned by, at least, equally qualified but more kindly critics.

Major George Oakley Totten, A.I.A, architect and author of an elaborate work, MAYA ARCHITECTURE, in which illustrations of the Aztec Hotel appear, says: "The so-called Aztec Hotel at Monrovia, California, by Robert B. Stacy-Judd (which is Aztec in name only, but Maya in feeling) is bold and original. The furniture and minor details have received careful study and have been well carried out."

Alfred G. Bossom, well-known architect, one of the earliest Maya enthusiasts and author of "AN ARCHITECTURAL PILGRIMAGE INTO OLD MEXICO," writes "I noticed those of your very interesting Monrovia Hotel in the June issue of Architecture and Building, and if you could let me have prints . . . etc." Later, Mr. Bossom wrote me as follows: "I believe now you are the only one in America who is really following on that activity, (referring to the Maya art motif introductions) it has unlimited possibilities . . . . I do wish you the very greatest possible success in the architectural pioneering that you are doing, and it would be a very great delight one day, I am sure, to have the opportunity of meeting you."

Professor Rexford Newcombe, A.I.A., History of Architecture Professor, University of Illinois, author of numerous architectural books, and one of the leading architectural educators in America, says: "This Aztec Hotel I find a most delightful excursion into one of the most fruitful fields of design that the American architect could possibly explore. I congratulate you upon the re-emption of this real American type of architecture." Professor Newcombe was one of those who decided that a review of my Maya adaptations should be given almost the entire issue of "The Western Architect," published in July, 1927. After publication he wrote me as follows: "I am sure that your work merits the attention we have given it, and I confidently look forward to an increasing interest in the thing you are trying to do. Your attack is an original one and you are to have all the credit that comes from

originating something new and worthwhile."

In my possession are scores of similar favorable comments from architects and editors of leading architectural journals throughout the world, not to mention the hundreds of lengthy illustrated national and international journal, magazine and newspaper articles from every civilized country on earth.

In Professor Kramer's article it is not clear to me in what manner he has given the architectural profession "the **correct** and archeological side of this question (boldface are mine). The only apparent effort he makes to give this "correct" information is his statement that "The architecture of this region (Yucatan) theoretically is not pure Maya." The remark, however, should be qualified. On pages 35 and 36 of the December, 1933, issue of The Architect and Engineer, I clearly indicate the fact of foreign invasions into Yucatan and the consequent introduction of Toltec and, later, Aztec cultures.

Old and New Empire Beliefs

Among my many somewhat revolutionary theories concerning the history and architectural remains of the Maya civilization, is one disagreeing with the so-called Old and New Empires belief; the former supposedly confined to the south of the Maya area, the latter to the north, or Yucatan.

Professor Kramer says, "During the sixth and seventh centuries of our Christian era these cities (referring to those of the south) were abandoned and **new cities** founded and colonized in Yucatan" (boldface are mine). I believe I am the first to point out that this is apparently an error and have offered reasons for so believing. It is my theory that the cities of Yucatan are at least as old as those of the south. Upon their return to Yucatan in the latter part of the tenth century, A.D., after over 300 years desertion, the Mayas "built over," or placed new exteriors over the original structures. There appears sufficient evidence to prove that Chichen-Itza, one, if not the largest, of the northern cities, was deserted circa 642 A.D. It is further evident that this city was founded by Itzamna shortly after the Christian era, therefore it is reasonable to assume considerable changes had taken place in architectural form and decorative design from the period of its founding until deserted by the Itzaes in the middle of the 7th century, A. D. Obviously, after the Itzaes returned to Chichen-Itza, approximately 987 A.D., a considerable building program was undertaken. At the beginning of the 11th century, upon the arrival of Kukulcan, another building revival took place. In my belief similar conditions prevailed in numerous other cities situated in the northern area, or Yucatan. If such was the case then evidence should be forthcoming to substantiate the belief.

On Page 31 of the January issue of The Architect and Engineer, I recite an instance in connection with the Castillo at Chichen-Itza which partially confirms my belief. On Pages 117 and 125 in my book THE ANCIENT MAYAS, I give as my opinion the high probability that the Casa de las Monjas in Uxmal, Yucatan, has been built over; the earlier Maya art is plainly to be seen on an inner face.

In T. A. Willard's book THE LOST EMPIRE OF THE ITZAES AND THE MAYAS, published in 1933, the author recites the incident of the finding of nineteen stones, or stelae, in Uxmal, by Frans Blom, which "afforded him a great thrill." After examination Blom decided they were of the "Old Empire" period. He thereupon set back the age of Uxmal "at least five hundred years earlier." In my book THE ANCIENT MAYAS, I mention this incident as I was present with Blom on that memorable occasion.

Professor Kramer in his article mentions human sacrifice and leaves the reader to infer that the custom is Mayan. Much has been written describing the ancient Mayas as pagans, savages, barbarians, and perpetrators of human sacrifice. All the evidence, however, clearly indicates contrary characteristics. They were a highly advanced race of people and there is no evidence whatever to show that the Mayas performed human sacrifice. The degrading custom was introduced into Yucatan by Kukulcan. The rite was an Aztec innovation

and formed one of the many "abominations" ascribed to those people and which were forced upon the gentle Mayas. The correctness of this statement is borne out in many ways in addition to the writings of Landa, Santillanda, Alonzo de Rrojas, and others.

One of the most misleading statements made by the Professor in his concern that the architectural profession be "correctly" informed as to Maya archeological facts and his endeavor to fulfill that worthy obligation, is his unsubstantiated remark that the lower part of Central America—the area of the so-called Maya Old-Empire—is the centre **"in which this great culture probably developed."** (Boldface are mine.)

This information, right or wrong, is undoubtedly important and belongs to the "archeological side of this question," as the Professor puts it; but, when he says "I do not agree with the opinions of this author (referring to myself) and promptly expresses one of his own (though not original), in all fairness to the reader and himself, he should produce at least some evidence in support of his contention.

It is my strong belief that neither the Professor nor any other Maya student can produce one tittle of evidence to uphold such a statement. To the contrary, all the testimony indicates that the ancient culture arrived hurriedly on the shores of Central America and Yucatan. The earliest works are undoubtedly the best and there is positively no evidence to indicate progress in Maya art at any stage. In fact it has long been my firm opinion (which I have endeavored to back by argument and confirming data, and which is alluded to in my articles and enlarged upon in my books) that, in all probability, the Maya civilization arrived on this continent at a period when its cuture was actually on the decline. The theory that the Maya art was born, flourished, and died in Central America, or any part of the Americas, is, in my opinion, without foundation.

Another misleading statement in the Professor's article is that "Comparatively **narrow** stairways rose at steep angles up the front or four sides of the pyramid." (Boldface are mine.)

Surely the writer is in error. Practically every stairway up the Maya structure is unusually wide. Each of the four stairways up the sides of El Castillo, the great pyramid at Chichen-Itza, for instance, is 44 feet wide. Usually, one of the outstanding features of Maya architecture is a wide stairway.

Thinks Critics Speak too Hastily

When it comes to discoursing upon the merits or otherwise of examples of Maya adaptations to modern American architecture, I feel that Professor Kramer's inexperience in the practical field of architecture has led him to speak too hastily. It will be noted that he has chosen as an example, to illustrate his viewpoint, his own conception of a "Pan-American Peace Palace."

In the average experience of a practising architect such sublime commissions are few and far between, in fact it is the subject of every architect's dream, and as such, in the vast majority of instances, it so remains. If only we of the profession could choose the type of architectural subject nearest our heart's desire, Peace Palaces, and similar monumental structures would probably take first place. Unfortunately, when a hard-headed group of business men desire, for instance, a hotel design comprising an odd assortment of practical requirements in the planning, combined with an outstanding decorative treatment to create unusual public appeal, the handicap is obviously one of deep concern.

If Professor Kramer has carefully digested the contents of my articles to which he refers, he will recall the paragraph describing my self-imposed task, which consisted of endeavoring to create a basis (at no time have I stated the result was final, or even approaching finality) for an essentially Columbian architectural style for **all types and classes** of structure commonly demanded in North America. In each and every instance the examples are actual commissions, the requirements of which were carried out to the instructions of individual clients.

In common practise the architect seldom has ideal conditions to fulfill, such as environment, site and requirements.

Professor Kramer's article includes, what must be inferred as original thought with him, nothing more nor less than a brief summary of the substance of my five articles, the full contents of which he consistently ignores in his criticisms but never hesitates to turn to for opinions. He says: "Our immediate predecessors in architecture had the same difficulty adapting the Classic to their designs. **It was only after they had stripped the ancient buildings to their meagre skeletons and learned the principles of the construction and the relationship of the sculpture to the construction that they were able to make logical modifications.**" (Boldface are mine.)

These words are precisely the intent and meaning embodied in my articles, and also my books THE ANCIENT MAYAS and ATLANTIS, MOTHER OF EMPIRES. In The Architect and Engineer issue of November 1933, page 39, I say:

> "Recalling no parrallel case from which to borrow experience I was left to my own devices.
>
> My first act was to reduce the Maya art to 'constructive sentences' and an 'alphabet' as applies to the 'language of architecture.'
>
> After this a 'grammar', or the science of the right use of the 'language,' was employed.
>
> This 'parsing' process reduced the Maya art as a composite whole to fundamental units.
>
> By rearranging these fundamentals on new lines, from a standpoint of architectural 'grammar,' it seemed reasonable to anticipate an ultimate distinct style acceptable to American demands."

The Mayas took the form of the lowly serpent and progressed the simple motifs through conventionalism to abstract design of great beauty. My humble efforts aspire to a similar formula, but with no exalted expectation of emulating similar results. Obviously, such a task is not to be accomplished alone through the experiments of a single individual, neither can it be completed in a single lifetime.

"Atlantis, Mother of Empires"

When it comes to the question of interpreting Maya symbolism, of which the Professor infers I am ignorant, I must ask his indulgence until my "Atlantis, Mother of Empires" is off the press. This work is the result of over twelve years intensive study and research in the Maya and many other fields of thought. Therein I submit my theories, not only those to which Professor Kramer objects, but numerous other far more radical opinions concerning Maya history and art. Therein, too, I deal with Maya symbolism and symbolism in general, ancient religions, ethnology, legends, mythology, architecture, root languages, customs, the origin of art motifs, astrology, racial migrations and distribution of early cultures throughout the world, etc.

It must be admitted that the origin and early history of the Maya civilization has roused a world of speculation, and that it is a subject upon which no two authorities agree. Therefore, it is unwise at this time to take a too definite stand on any one point. The student of Maya culture, however, has a virgin field of thought before him. He is free to speculate at will, but if his theories are accompanied by logic, sound reasoning, and corroborative data, they are at least worthy of serious consideration.

After having carefully read Professor Kramer's article I fail to find any corroboration of his objections, or fulfillment of his promise to give the "correct archeological side of this question", in fact I find no item mentioned which is not more fully described in my own articles and still further expressed in my book. It is far from my intention to be intolerant when considering the opinion of others, but, in view of the general lack of knowledge on the subject, the reader should have been supplied with sufficient convincing and corroborative data in support of the Professor's objections to my beliefs.

OPERATIONS BUILDING, NAVAL AIR STATION, ANACOSTIA
Plans by U. S. Bureau of Yards and Docks, Washington, D.C.

BARRACKS AND MESS HALL, PEARL HARBOR, T.H.
Plans by U. S. Bureau of Yards and Docks, Washington, D.C.

DESIGN FOR A POST OFFICE BUILDING
Reginald D. Johnson, Architect

ARCHITECTURAL EXPRESSION

DESIGN INFLUENCED BY ENVIRONMENT AND TRADITION

Reginald D. Johnson
in The Federal Architect

SINCE the Columbian Exposition in Chicago in 1892, it is possible to trace four more or less distinct philosophies of design at work in this country in the solution of architectural problems.

First: We have that great school which is conscientiously and religiously following precedent in its effort to clothe our modern structures with stone, brick or wood. The argument of this school of thought is of course that while they recognize that evolution in design is bound to take place, they nevertheless believe the only safe and sane course is to proceed with the greatest of caution and the minimum amount of experimentation. Such delightful buildings as the Boston Public Library and the Freer Gallery of Art are excellent examples of this philosophy showing, at the same time, strong indications of the individuality of their respective designers.

Second: We come to that school of thought which still holds very closely to the past for its inspiration, but shows a breaking away from exact traditionalism. The architects who represent this school were educated as a rule along strictly traditional lines, but it is evident that in the minds of these men there is a revolt against the inconsistency of trying to solve modern problems with the definite limitations laid down by precedent; and, while they struggle to free themselves from the shackles of tradition, they are only able to do so to a very limited extent, due to the fact that in their youth they had been so thoroughly grounded in the philosophy of the older school of thought. Their whole approach toward a problem in design is automatically based upon precedent.

Bertram Goodhue, during the period of his association with Ralph Adams Cram, is an excellent example of what I have in mind.

Third. We now come to that school of philosophy in architectural design which is the direct result of the restraint placed upon the honest expression of materials and construction. Almost in desperation, we see a school giving birth to a new concept of architectural thought. Many of our great "skyscrapers" and the Nebraska State Capitol illustrate this point-of-view.

Fourth: As in all schools of philosophy, whether relating to architecture, economics or politics, we have an extreme left wing. We hear much of "Functionalism" in architecture, and we are surfeited with designs which express nothing else, and thereby are supposed to merit our approval. This ultra-modern school has, however, taught us some very valuable lessons. As a result of its experiments, we are beginning to think in terms of filler walls and cantilever construction in our designs, rather than simply in the terms of bearing walls, as in the past.

Let us now, as it were, try to stand back and see these four philosophies of design in their true relationship to modern conditions.

The first school of thought, as ably interpreted by that great firm of architects—McKim, Meade and White—had unquestionably one basic inconsistency, namely, the impossibility of adapting in a logical manner the designs of the past to modern materials, modern workmanship and modern construction. I, for one, nevertheless feel that in certain instances environment and tradition in certain communities in this country warrant, to a great degree, this approach toward the subject. For example, there are many delightful towns in New England and in the South, and a few in the Southwestern section, where precedent in the past has been so well established that we are more than justified in carrying forward our newer buildings in at least the spirit of what has gone before, no matter what the Modernist may say to the contrary. These instances need the skill of the traditionalist in their solution, but they are comparatively few and far between. By and large, we need in this country much more of the so-called "modern" point-of-view.

DESIGN FOR A POST OFFICE BUILDING
Reginald D. Johnson, Architect

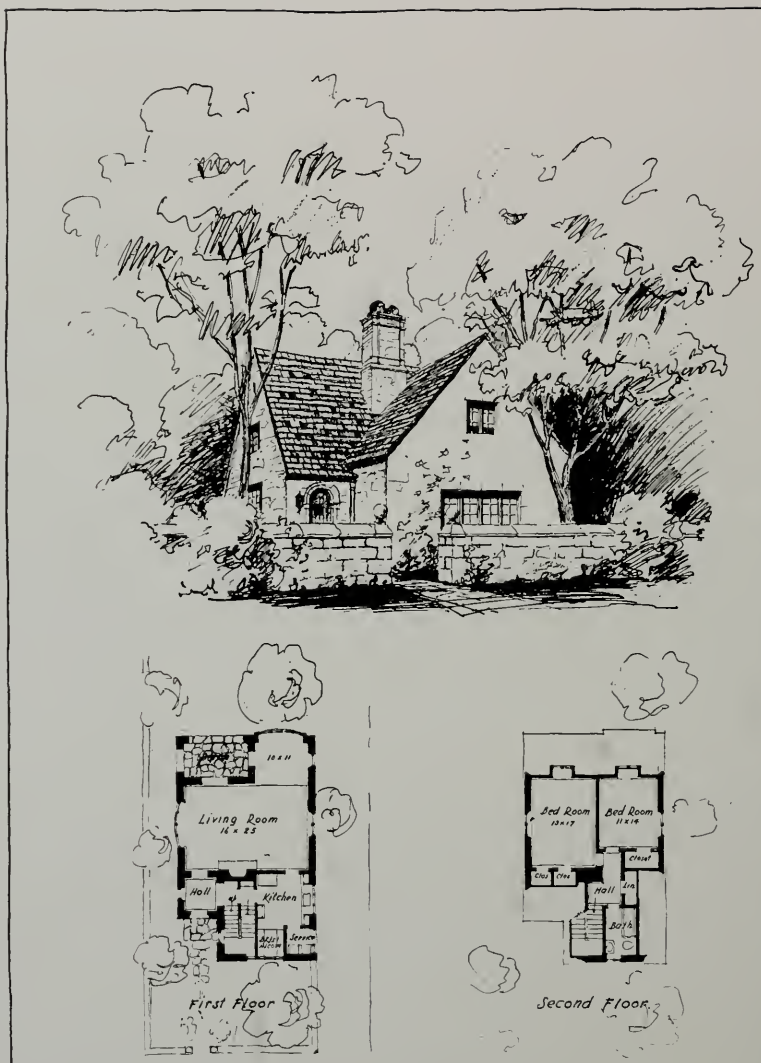
Personally, I do not feel, however, that the extremist in Modernistic design has any chance of permanently satisfying the aesthetic needs of our country. The pure Functionalist soon finds that if he carries his philosophy to its logical conclusion there is nothing left but wall surfaces and openings, and he is already trying to camouflage this by all sorts of clever tricks which are in themselves mere subterfuges. Over a period of many years, man's aesthetic expression has always been logical, and with this assumption I think we can see evolving from the four philosophies mentioned above a type of design which will—first, be functional in plan, section and elevation; second, will express the materials used; and third, be based on pleasing forms derived and evolved from past centuries of endeavor, and adapted when necessary to new materials. Really worth while new forms in both detail and mass will only evolve slowly.

In making this statement, I am also taking for granted that with the introduction of the machine age and with the streamline, which we admire in the aeroplane and the automobile, we are unconsciously developing a somewhat different aesthetic reaction from the past. For some reason, we seem to demand expressions in positive vertical or horizontal motifs plus great simplicity. The desire for simplicity unquestionably is largely due to the fact that the tempo of our lives today is far faster than in former ages, and as a result we are, generally speaking, a somewhat tired people, and therefore demand simplicity rather than elaboration and stimulation in aesthetics, whether it be in architecture, painting or sculpture.

DESIGN FOR A POST OFFICE BUILDING
Reginald D. Johnson, Architect

The mere copying of the past has gone for good and ever. The future of architectural expression, with the exception of a few locations where tradition has a very strong foothold, unquestionably will be some honest, straightforward form of the structure with the minimum amount of ornament and detail.

In brief, the architects of today are discarding plagiarism and returning to honesty—an honesty which, previous to the machine age, was characteristic of all good architecture, and not something newly discovered by the Extreme Modernist.



Residence to be built at
South Pasadena
H. Roy Kelley Architect

SAN FRANCISCO
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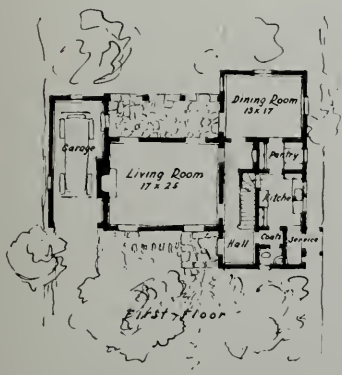
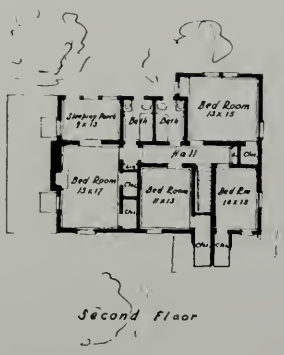


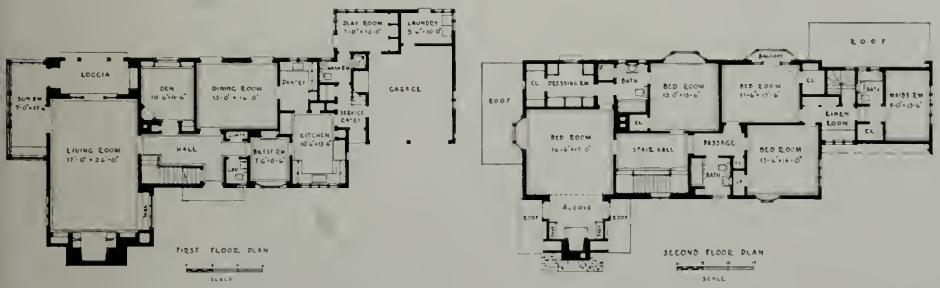


House for
Los Angeles Cal
H. Roy Kelley Architect
Pasadena Cal

CHIMNEY DETAIL, RESIDENCE OF THEODORE OFF, HOMBLY HILLS
H. ROY KELLEY, ARCHITECT

RESIDENCE OF THEODORE OFF, HOMBLY HILLS, CALIFORNIA

H. Roy Kelley, Architect



RESIDENCE OF MR. AND MRS. THEODORE OFF

This early American type residence has an excellent outlook upon a broad expanse of the surrounding mountains of Holmby Hills and Bel-Air. It is located within a few minutes drive of the University of California at Los Angeles.

The exterior half timber work is of weathered oak. The exterior plaster is an old weathered natural stone color which blends with the natural stone of the chimneys. The roof is of weathered hand split shakes.

The walls of the principal rooms are of a slightly textured cream-colored plaster with oak beams and wood ceilings. The floors are oak planks of random widths.

"YOUNG WOMAN"

BY HELEN PHILLIPS

Awarded Museum Purchase Prize, 56th Annual, San Francisco Art Association, now showing San Francisco Museum of Art.

Moulin Photo

A close up of Buddha, the central figure of the Cambodian Pageant and Ball, Municipal Auditorium, San Francisco.

Moulin Photo Life size elephant bearing Prince and Princess, Cambodian Pageant.

CAMBODIAN PAGEANT

Artists Ball Colorful and Resplendent

SAN FRANCISCO has again shown to the world that it "knows how." The latest exemplification of this now famous saying of the late President Taft, was the Cambodian Ball and Pageant, depicting the Fall of Angkor Vat, at the Municipal Auditorium, the night of January 17th, under the auspices of the San Francisco Art Association.

With Timothy L. Pflueger, architect, as its versatile general director, the Parilia proved one of the most successful affairs of its kind ever undertaken in these parts, and this in the face of the fact that it was the fourth event of similar nature to be given by the Art Association.

Lucien Labaudt, well-known San Francisco artist was art director.

The story of the Pageant was compiled from various Cambodian myths by William H. Smith, Jr., who acted as production director.

An outstanding pageant entitled to international recognition, was the verdict of such distinguished critics at Maurice Sterne, internationally famous painter and sculptor, Col. W. de Basil and S. Hurok of the Monte Carlo Ballet, who were present, as well as Lady Mendl, (the former Elsie De Wolfe), and Prince Valdemar of Denmark.

It was to introduce the pageant that the Teller of Tales spoke (in the person of Edgar Walter, sculptor), and when he had done, the nine thousand spectators saw towering before them a temple-like structure of colossal proportions. It rose upwards into shadowed space in broad tiers which were designed eventually to hold the 881 participants in the pageant. Its central feature was an enor-

Moulin Photo

"Siam" (Second unit of California School of Fine Arts) pays homage to Prince and Princess, Cambodian Pageant. Note life size white elephant, followed by a baby white elephant bearing royal pair.

Moulin Photo

"Java" (East Bay Artists Unit) presenting two colossal Javanese marionettes, 18 feet high and painted in blue, magenta and gold.

mous green Buddha, sculptured by Robert Howard.

To give some idea of the proportions of the pageant, it were best to explain that the hall in which it was held occupies a city block. The setting, with a stage in front of it, stretched the width of one end. The pageant entered opposite the stage, and moved the length of the hall to it. As each of the 12 units of which it was composed finished its performance, the participants took assigned places on the tiers above the stage. The entire action was accompanied by an orchestra of 30 pieces.

The units are described, with an outstanding feature of each, as follows, in the order of their appearance: "The Frieze of the Lotus," Alumni Association, California School of Fine Arts, 100 participants; costumes green and silver. On a litter carried on the shoulders of 12 men, a large silver lotus flower on which sat Siva and Parvati, performing a ritualistic dance.

"Frieze of Maidens at the Fountain," California School of Design, 24 girls carrying water jars and flowers; costumes red-orange. "Frieze of the Heavenly Maidens," San Francisco Society of Women Artists, 50, many carrying tall, stylized palm trees with white stems; costumes blue-green. "Anam," Chinese Art Association, 22, yellow - orange. Group dance on floor, followed by solo sword dance on stage.

"Court of Kambu," San Francisco Art Association, 100, orange-red and gold. King Kambu (Victor Arnautoff, artist) and Princess Naga (Esther Bruton, artist) entered on life-sized elephants, attended by symbol-bearers. They dismounted and ascended their throne, at the feet of the Buddha. Then a most effective Cambodian dance was performed on the main floor by a large group (Anne Mundstock, choreographer), with Marcelle Chesse and Patrick Bradfield as the principals, in silver.

"Burma," Betty Horst Dancers, 10 girls, gold and green, in a finished Burmese dance, on the stage. "Java," East Bay Artists, 35, blue; two colossal, articulated Javanese marionettes, 18 feet high, operated with sticks, and painted in blue, magenta and gold, accompanied by a devil dance, in masks. "Tonkin," San Francisco Architectural Club, 110, yellow-green; a group of effective banners, some 30 feet high; Indo-Chinese dance.

"Siam," California School of Fine Arts, first group, 150, red-orange and gold; flame dance on floor. "Ceylon," Rudolph Schaeffer School of Design, 25, red-violet. "India," George Pring dancers, 55, blue-violet; Nautch dance on stage. "Siam," California School of Fine Arts, second group, 150 orange-red, white and silver; a life-sized white elephant, followed by a baby white elephant, bearing a prince and a princess, respectively.

Lastly, Naga, the Seven-Headed Cobra, attended by 30 Indriyas in green and gold, appeared, to wreak vengeance. Her snake body, 30 feet in length, uncoiled as she approached the stage. Angkor-Vat became enveloped in smoke and flame, which had its destruction from the profaning eyes of Man.

Summing up Junius Cravens writes:

"Thus ended what was probably one of the most resplendent pageants that has been staged anywhere in our time. It was so colorful in pattern, so colossal in scale, that adjectives seem inadequate in attempting to describe it. It was artistically conceived and executed, expertly directed and beautifully performed."

JOE B. LARRINAGA OF HOLLYWOOD, CALIFORNIA, colorist and delineator for the Texas Centennial Exposition, shown in his studio with a model of one of the buildings for the Fair. The Californian predicts that architecture of the Texas Centennial Exposition will set a new fashion for construction.

BRACING SMALL FRAME STRUCTURES

A NEW PROBLEM FOR CALIFORNIA BUILDING INSPECTORS

by

A. L. Brinkman, Berkeley

WHEN the Riley Act was enacted by the California Legislature in 1933, the Building Inspector was confronted with two problems, neither of which had been very seriously considered in connection with the usual small frame dwelling, store, warehouse, or multiple garage, unless some special provision existed in the local code.

The first problem was: Shall the lateral force law be applied to minor structures, such as those mentioned above?

The second: What allowances shall be made for the ordinary traditional types of wall construction, such as horizontally and diagonally sheathed walls, wood lath and plastered partitions, stucco, and fire-blocking or herringbone bridging?

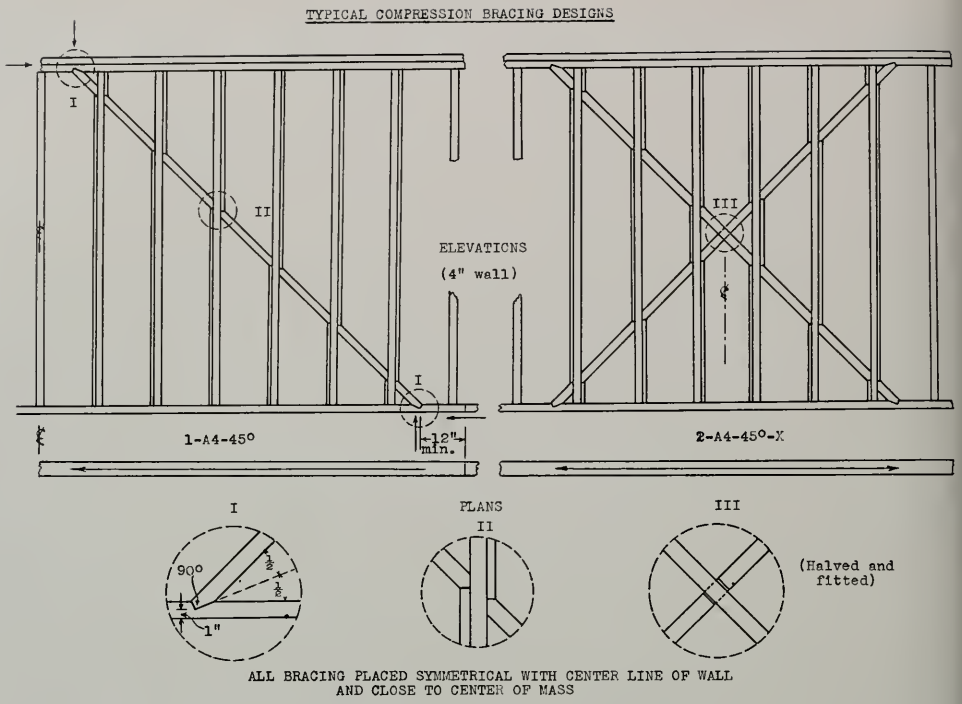
In some localities, the first problem was dismissed as being unimportant for frame structures of the conventional type not over three stories in height. This action, of course, eliminated consideration of the second problem. However, in this connection, at that time there was already in existence a considerable literature dealing with the relative stiffness and rigidity of various types of frame walls and special bracing designs.

If, on the other hand, the Building Inspector interpreted the Act in such a manner that all new buildings were subject to investigation, the second problem became a very real one, and was further expanded by the natural question: How detailed and complete an analysis is justified in the above type and class of structure?

It is thought by the writer that possibly the way this problem was handled in Berkeley might be of general interest, and below is given a brief outline of our present procedure, dating from May 1, 1933.

First of all, it was assumed that all new structures must be properly braced to comply with the law. Next, the bracing system was optional with the designer, and certain values of bracing elements were assigned, such as 65 lbs. per linear foot for horizontal sheathing (net wall length) but no credit was allowed for instance, for wood lath and plaster or for fibre boards.

Then, certain mandatory requirements were



set up, such as: "balanced" footings (inverted T sections, double-battered, or combinations), two 3/8-inch deformed bars in the lower half of all footings, bolted mud-sills (usually 3/4-inch bolts, 10 inches long, at 6 foot intervals).

Gable ends were required to be braced, and open fronts of garages were strengthened by horizontal diagonal bracing or by diagonally sheathed floors overhead.

In the case of small stores, a reinforced concrete U frame was built on the front, the upright legs acting as cantilevers in resisting forces parallel to the plane of the open front. These U frames are useful in one story reinforced concrete or brick structures, being adaptable as longitudinal and transverse stiffening bents.

Finally, some designers would say, "Well, I have never had to analyze or specially brace such a structure, and I don't want to take the time or incur the expense of hiring an engineer —so what is a simple method of bracing the ordinary frame dwelling?"

This put us on the spot—; should we insist that a man who was building a $3,000 one-story, five-room dwelling, pay an engineer to go over the plan and design a bracing system? (Remember, the majority of such plans are **not** designed by either an architect or engineer.)

As a result, it was decided to publish a small table of values of what we called the "Berkeley Compression Brace"—a very simple brace for which we claim no credit as to its originality.

It consists of the usual diagonal integral blocking, reversed in direction from customary

fashion, in order to "pick up" a maximum dead load vertical resisting couple, and having the head and foot cut off horizontally to meet vertical cripples which extend from head to plate and foot to sill, and arranging a special dapped-end design at plate and sill (see sketch).

We also encourage the use of diagonal sheathing, both single and double, allowing double values when walls are diagonally sheathed in opposite directions on opposite sides of a wall.

The compression brace was well received, as the final test was the carpenters, and they had absolutely no trouble in accommodating their traditional methods to this brace. The retention of the integral blocking also served as fire blocking, the only "extra" being the few cripples, which were usually scrap lumber anyhow.

Thus, if the designer furnished us a strain sheet showing the forces assumed, and reasonably expected, to be acting on bracing walls, and the "type" of brace taken from our table, we accepted the plans and felt that a reasonable compliance with the Act had been achieved.

The consideration of torsion, "center of rigidity," "center of mass" and rotation in these minor structures, was dispensed with in all but the most exceptional cases.

The tables reproduced in this article are based on nominal sizes, and ordinary workmanship, using No. 1 Common Dimension O. P. or equal lumber.

VALUES ASSIGNED TO COMPRESSION BRACES AND SHEATHING

(Based on P-900 p.s.i. Q-300 p.s.i.)
(S-75 p.s.i., and EQK inc.-33⅓)

a—Horizontal sheathing (net wall length) @ 65 lbs. per linear foot.
b—Diagonal sheathing (net wall length) @ 185 lbs. per linear foot.

Type of Brace	Size of Diagonals (2" Studs)	Size of Cripples	Size of Plates	Depth of Daps	Horizontal Resistance @ 45°
A4	2"x4"	1"x4"	2"x4"	1"	1600#
B4	3"x4"	2"x4"	2"x4"	1"	3120#
C4	A4 plus B4 in tandem in same wall or plane				4720#
D4	Two B4's in tandem in same wall or plane				6240#
A6	2"x6"	1"x6"	2"x6"	1"	2400#
B6	3"x6"	2"x6"	2"x6"	1"	4680#
C6	A6 plus B6 in tandem in same wall or plane				7080#
D6	Two B6's in tandem in same wall or plane				9360#

(NOTE: For larger values, check dead load couple.)

TYPE OF END DAPS (see sketch).

For braces at 60°, use 0.6 of above values.

A STUDY IN ROOF LINES

THE TERMITE SITUATION

PUBLIC INTEREST INCREASES AS NATIONAL MAGAZINES DIRECT ATTENTION TO ALARMING CONDITIONS

by

A. A. Brown, C. E.

THE incidence of termite damage in the United States is assuming genuine importance on the part of the public as evidenced by leading magazine articles appearing in the Saturday Evening Post, Time, and Readers Digest. All of these publications are of national circulation, and such articles are intended to direct the attention of the public to important developments which would be of interest to the reader. Other popular magazines in recent months have also carried articles on this same subject. The interest thus shown should prove helpful in directing attention to the need for local investigations, and the preparation of standard specifications to deal with the problem in major communities. Conditions which retard or accelerate the destructive activities of these pests vary greatly from community to community. With more than fifty species native to our country, and the conditions surrounding the activities of these various species differing one from another, it should be apparent that no stereotyped formula for their control can be used without reference to the specific conditions to be met.

It has often been said that a sure way to gain a man's interest is through his pocketbook. While this may not be true of all individuals, its appears to be true with most of us. Termites are touching the pocketbook of American home owners. According to the Bureau of Census Reports of 1930 there are more than twenty-five million buildings (houses and apartments) in the United States. For a number of years past these buildings have suffered an annual average fire loss of $250,000,000, or about $10 per dwelling. Many guesses have been made as to annual damage by termites to wooden structures. The Bureau of Entomology of Washington has used the figure of $40,000,000 to represent this annual damage. The National Committee on Wood Utilization places the figure at $45,000,000.

Of the wood frame buildings inspected in the San Francisco Termite Survey, more than 82 per cent were found to be infested by one or more species of termites. The estimated damage to these structures varies from $25 to several thousand dollars, and in a few instances caused the condemnation and subsequent demolition of the buildings. In approximately 10 per cent of those structures found to be infested, structural weaknesses were discovered requiring immediate repairs to safeguard public safety. A number of buildings of two or more stories were found with columns so heavily damaged as to destroy their structural value and require their replacement. One of the most serious cases of this kind to come to my attention was a two story and basement building where fourteen of the wooden columns in the basement were removed and replaced with steel. In a six story apartment building it was necessary to replace a 10x10 wooden column in the basement.

Termites Infest Industrial Buildings

The buildings in seventy-five contiguous blocks within the fire limits of the 1906 con-

flagration were inspected, and provide a yardstick for estimating the approximate damage done to structures by wood-destroying organisms. Within this area, one corporation owns some twenty-seven buildings. At its request these structures were inspected in company wih two of its maintenance engineers. At the conclusion of the inspection these engineers estimated that it would require the expenditure of $100,000 to repair the damage uncovered. These, of course, were industrial type structures, and the average unit of termite destruction was higher than is normally found in a dwelling. Assuming that all the buildings within the fire limits have been constructed subsequent to the fire of 1906 with an average of approximately 25 years, the annual damage by these insects is far greater than is commonly estimated. Indeed, it may exceed the loss caused by fire.

To support any building on shoring and replace main columns is, at best, a costly procedure, and as noted above this has been done in a number of instances. An apartment house built in 1907, repaired in 1914, the lobby of which was reconstructed in 1928 due to Zootermopsis infestation, was again reconstructed in 1935 due to the destructive work of these insects. The repairs to this building on each occasion merely provided the termites with a **fresh new food supply.** It is well known that termites prefer new, freshly-cut lumber to old, dry, and thoroughly seasoned material. In making such repairs, chemically treated wood that has been rendered unpalatable to termites should be used.

In San Francisco we are dealing with two major types of termites, namely the **Rhinotermitidae,** which make their home either in whole or in part in the soil, and the **Kalotermitidae,** which make their home in the wood. In the latter classification we have two major types: Zootermopsis, the so-called damp-wood termite, and Kalotermes, commonly known as the dry-wood termite. This latter group was not reported as being present in San Francisco, in the report of the Termite Investigations Committee. Both major groupings of termites have a number of things in common: they depend upon cellulose for food; they always have fungi present in their burrows as an aid to provide a balanced diet. This material supplies the proteins. They live a hidden life protected from their natural enemies, the ants; they are blind and shun light except at the swarming season when the reproductives have eyes and are attracted to light. There is a wide variation, however, in their tolerance to the percentage of moisture present and in the ability to produce moisture from the wood. We found from laboratory determinations that Zootermopsis can successfully colonize in wood containing as little as 13.35 per cent moisture, and they are also found nesting in wood with 220 per cent moisture by dry weight of the wood. The formula for cellulose is C6-H10-O5. Breaking down this formula into two parts, and by taking oxygen from the air, termites are able to obtain six parts of carbon dioxide (CO2) and five parts of water (H20). Thus, by controlling the circulation of air in their colony, and producing water by chemical processes from otherwise dry wood, once established the Zootermopsis can create sufficient moisture to live in dry wood. This ability on the part of wood-dwelling termites to create their own moisture supply, makes the problem of prevention, eradication and control more complex than in the case with the ground-dwelling termites.

Wood Dwelling Termites Active

Subterranean termites depend primarily for their moisture supply upon ground connections. They seem unable to create moisture from the wood to the same extent as the wood-dwelling termites. Consequently it is not so important in making repairs where subterranean termites are involved to eliminate all members of the colony, since the remaining members will in all likelihood dry up and die. Not so with the Zootermopsis. Members of such a colony which remain after repairs have

been completed will, within six to seven weeks, develop supplementary reproductives which are more prolific egg-layers than the original queen.

Wood dwelling termites have been found in 44 per cent of the buildings infested, and in 56 per cent of the structures, subterranean (ground dwelling) termites were present. San Francisco is a city that is very compactly built. Residential lots are small, usually 25 feet wide, and in most instances buildings are constructed to within an inch of the property line. Subterranean termites are known to build runways in the ground traversing great distances, as well as reaching considerable depth. In one instance subterranean termites entered a Class A structure through joints in the concrete of the basement floor some 25 feet below the street level and constructed covered runways to the furnishings on the main floor. The ability of these subterranean termites to travel under the ground surface from one place to another, probably accounts in a measure for the very heavy percentage of infestations in wooden structures in San Francisco where buildings are constructed in contact one with the other. Termites under these conditions become not only the problem of the individual property owner, but a neighborhood problem as well. As an example of the situation created by these conditions, the owner of a home constructed within the last three years became interested in the termite problem and requested that his property be inspected. It was built on a 25 foot lot and within less than one inch of the adjoining structures. His property was found to be infested to a minor degree, but the older adjoining buildings were heavily infested. The owner in this case was interested in eradicating the termites on his own property. On the other hand, his neighbors were not at all interested. In a block containing fifty to sixty homes, where the space between such buildings is less than one inch, and where more than eight out of ten houses are infested with termites or beetles, the individual attempting to protect his property against the ravages of these pests finds himself often surrounded by properties harboring large nests of termites, to which he has neither access nor jurisdiction. Such conditions indicate the interdependence of neighbors in the control of these pests.

While the number of infestations by wood-dwelling termites are not quite as numerous as those of the subterranean variety, the cost of making repairs is usually much greater. The ability of these insects to create their own moisture and not depend upon moisture from the ground, greatly extends the range of their destructive activity. They are frequently found in the second, third, and fourth floors of buildings. Some two years ago, the engineers of one of our railway companies termite-proofed one of their large train sheds infested by Zootermopsis, on the assumption that by cutting off the supply of moisture from the ground the termite colonies would die out. In their treatment they bored holes in the top of the underpinning some distance above the ground, and inserted a quantity of paris green; and at the base, a number of holes were filled with the crystals of paradichlorobenzene. These latter evaporate slowly and the heavy poisonous fumes, being heavier than air, are supposedly distributed in the wood. Due to the grooming habit of termites, the use of paris green has in many instances proved effective in poisoning a colony of dry-wood termites when introduced into their runways; but sufficient moisture appears to be present in the galleries of the Zootermopsis to cause this poison dust to cake and render it more or less ineffective. A recent inspection of this same train shed disclosed that the termites had **moved up,** and that many of the main building columns above the first floor are now heavily infested.

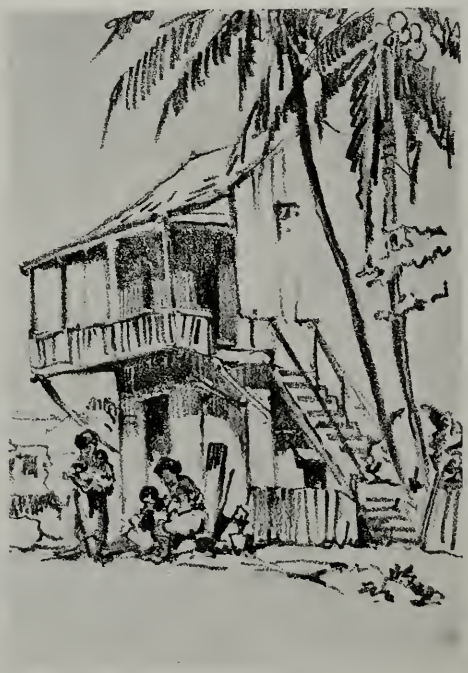
Should Study Habits of Insects

In another building infested by Zootermopsis, the underpinning was entirely renewed in July 1935. During the fall months, the tenant was annoyed by frequent swarms of winged reproductives appearing in the building. A

recent inspection showed these termites to be colonizing at and above the first floor, indicating that the work of eradcation in the first place was incomplete, or fully developed alates would not now be present.

These incidents illustrate the importance of knowing the habits of the insects encountered before any attempt is made to prescribe a remedy. In every instance where inspections have been made following attempts to eradicate Zootermopsis, we have found these termites still present.

To locate and destroy all members of a colony of wood-dwelling termites the use of a high gain audio amplifier in conjunction with an osciloscope should be encouraged to detect their presence by sound. The osciloscope is far more sensitive to sound vibrations than the equipment commonly used for the magnification of sound. It is a large bell-shaped tube, the end of which is phosphor coated and acts as a projecting screen when energized by the sound waves. The characteristic sound waves are reflected on this screen in the form of curves visible in daylight. Only by the use of such apparatus, or other scientific equipment, can one be reasonably certain that all hidden sources of infestation have been destroyed. It is difficult, if not impossible, to establish general rules for control and eradication that would apply equally in all communities. The existence of a large percentage of buildings on 25 foot lots, together with the prevalence of Zootermopsis in San Francisco, presents a combination of conditions that are peculiar to this city. To successfully cope with the problem created by termites in any community, it would seem necessary that one should be familiar with the physical property relationship, as well as the biological problem presented.



SKETCH BY ERNEST PETERSON

UNUSUAL FEATURES OF A LOS ANGELES AIR CONDITIONING INSTALLATION

INTEREST in air conditioning is being centered on actual installations in use, rather than on equipment alone. A particularly interesting and recent installation, incorporating novel features, is a one-story reinforced concrete building at 1138 So. Broadway, Los Angeles. The building is approximately 50 ft. wide, 80 ft. deep, with a 20 ft. ceiling. It is divided into a large front room, with a mezzanine extending to the rear wall above three rear private offices, vault and toilet rooms. The main floor is cement on dirt and is covered with linoleum. Occupied by a finance company, the building is used throughout for office purposes.

The air conditioning system consists of seven standard Conditionair room units, a newly perfected appliance recently introduced to the field, served by a central gas-fired hot water generator and a central refrigeration unit. Four of the room units are located in the main office and one in each of the three rear private offices. The hot water generator is located in one of the toilet rooms near the center of the building, the ceiling of which is the full height of the building and is provided with a skylight ventilator. The refrigeration unit is located under the stairs that lead to the mezzanine.

The Conditionair room units contain a propeller type fan driven by a 1/20th horsepower motor, a spray type, atomizing humidifier, a finned copper tube heating element, a finned copper tube cooling element, and a wool felt pocket type air filter. The cabinets are of furniture steel finished in walnut, the castings are of aluminum, the heating and cooling coils are copper tubing, cadmium plated, and the steel parts are cadmium plated to prevent corrosion. The heating and cooling elements are combined in a single physical unit having common fins, two banks deep, but with entirely separate tubing, the heating coils occupying the position of the first bank, the cooling units that of the second.

A duct through the wall back of each unit allows 100 percent outdoor air to be drawn through the unit, or a circled louvre in the front of the unit may be opened to allow re-circulation of inside air. Opening this front louvre for re-circulation also turns a damper that cuts off about half the area of the outdoor air inlet. This arrangement is intended to permit introduction of 100 percent outdoor air or a minimum of 50 percent outdoor air even when the re-circulation inlet is used. Incorporated in each unit is a storage chamber for disinfecting, perfuming or medicating the air. Aromatic material from the chamber is drawn in by the fan and mixed with the air discharged by the unit. This function may be operated regardless of whether air is being entirely drawn from outdoors or partly re-circulated.

Hot water for the heating element and chilled water for the cooling element is supplied to each room unit through copper tubing insulated with wrapped felt and laid on the ground under the cement floor. Water for

the humidifier nozzles is taken from the hot water lines. A copper tubing waste line from each room unit runs under the floor to a covered sump in the floor of a toilet room.

Electric energy for the fan motors is supplied by a convenience outlet located in the wall back of each unit. A rheostat permits fan operation at 450 r.p.m., 900 r.p.m., and 1250 r.p.m, at which speeds the fan is rated to handle respectively 100, 200 and 300 cu. ft. of air per minute. An unusual provision is that of water cooling for the rheostat and motor by means of encircling coils of 1 3-inch cadmium plated copper tubing around each, through which water from the chilled water line passes.

The most unusual feature of this installation, perhaps, is the scheme by which city water pressure is used to convey the hot and chilled water to the room units where it is wasted to the drain after passing through the unit. For the hot water source a gas-fired automatic instantaneous water heater of 4.1 gallons per minute, 60 deg., rise capacity, is used. Located in the corner of one of the toilet rooms, this heater is connected to city water supply just as it would be for domestic hot water, and in fact, it does furnish hot water to two lavatories. However, the heater's main fuction is to supply the finned heating elements of the air conditioning room units with hot water, and from the heater outlet a 3 8-inch copper tube runs to each unit. Opening a valve at the inlet of the heating element of any room unit operates the automatic instantaneous heater in exactly the same way as turning on a hot water faucet. Hot water, forced by city pressure, passes through the unit's heating element after which it is wasted to the drain connection through a metered orifice. This orifice is sized to allow a maximum average consumption of 16 gal. of water per hour.

For cooling purposes, city water supply is connected to and passes through a pair of twin heat exchangers in series. The primary side of these heat exchangers is chilled by direct expansion of a refrigerant supplied by a 3 - horsepower refrigeration unit, which with the heat exchangers is located in an insulated compartment under the mezzanine stairway. The unit is set to reduce the temperature of the water passing through the heat exchangers to 40 deg. F. Three-eighth inch copper tubing from the heat exchanger outlet to each unit conveys the chilled water, which, forced by city water pressure passes through the unit's cooling element and is wasted to the drain connection. The amount of chilled water passed through the cooling element is controlled by a valved inlet and a metered orifice outlet. The average maximum water consumption for cooling is rated at 16 gal. per hour. Water condensed from the air in the cooling process and excess water from the humidifier nozzles is collected in a drip pan connected to the drain lines that serves the heating and cooling elements.

The installation provides extreme flexibility, each room unit operating independently. Moreover, the output of each unit may be varied independently by changing the fan speed, reducing or increasing the quantity of hot or chilled water passing through the elements, or changing the setting of the re-circulating damper. The use of city water pressure to control the gas fuel used for heating, by selecting an instantaneous automatic water heater in place of a heating boiler, while not new in principle, is unusual for a heating installation.

FERRIED ON BARGES roadway trusses for the Bay Bridge are lifted from midbay into position and fastened to suspender cables as shown in sketch.

TRAFFIC STARTS OVER BAY BRIDGE IN LESS THAN TEN MONTHS

IN LESS than ten months, completion of the world's largest bridge will be California history.

Despite the pace of the 30-hour week and the obstacles which nature places in the way when man seeks to set new engineering frontiers in defiance to the hazards of deep water and dizzy heights, the world's largest bridge from San Francisco to Oakland may finish ahead of schedule. By November, 1936, Chief Engineer C. H. Purcell expects to have finished the paved decks so that the bridge may be opened to traffic for the Stanford-California big game which will be played at Berkeley this year.

Thus far approximately $40,000,000 has been expended on bridge and approaches. The railway portion will not be completed until after the highway decks have been opened to the traveling public. Referring to the importance of both the Bay and Golden Gate Bridge projects, Earl Lee Kelley, Director of Public Works, is quoted, in the last issue of California Highways and Public Works as follows:

"The building of this world's greatest $77,600,000 bridge between San Francisco and Oakland, and its sister bridge, the $35,000,000 Golden Gate structure, sets in motion the tidal wave of public interest in California which is to produce a tremendous exposition on a specially made island in San Francisco Bay in 1938. The entire west is tributary to these great bridges and California is the special beneficiary.

"The engineering wonders of these two record-breaking structures have turned the eyes of the world on America, on California, and on San Francisco Bay—just as Boulder Dam has turned the spotlight on Los Angeles.

"During its first year we expect the bridge to carry 6,000,000 vehicles, and full prosperity only needs to return to give the bridge an annual passenger traffic of 50,000,000 persons."

A report to Governor Merriam sets forth the following schedules for completion of units of the San Francisco-Oakland Bay Bridge this year:

BERKELEY UNDERPASS—now complete.

EAST BAY DISTRIBUTION VIADUCTS—complete April 1.

MAINTENANCE BUILDINGS IN OAKLAND TIDELANDS—complete July 1.

EAST BAY BRIDGE—cantilever closed March 7.

PAVING EAST BAY—complete May 7.

YERBA BUENA ISLAND—upper deck of tunnel and all island work, including the tunnel—complete June 1.

Courtesy California Highways and Public Works

BUILDING THE WORLD'S GREATEST BRIDGE. SHOWING WORKMEN TIEING HUGE TRUSSES TO CABLES

BUILDING WORLD'S GREATEST BRIDGE

Left to right: Leland F. Cutler, Director Earl Lee Kelly, Chief Engineer C. H. Purcell, and Jesse Jones, Chairman of the RFC.

WEST BAY BRIDGE—(The twin suspension bridges, East Bridge and West Bridge, over the West Bay Channel, between San Francisco and Yerba Buena Island)—The west bridge will be completed first, with all of its spans hung from the cables by March 15, and the steel floor in by April 15. The East Bridge, between the concrete center anchorage and the island, 28¾-inch cables for which are now being spun, will have its decks hung by June 15 and its steel floor in by July 15; all paving in the West Bay will be complete by September 15.

SAN FRANCISCO APPROACHES—complete by July 1.

ENTIRE BRIDGE—(exclusive of railways)—paved by September 15 and cleaned up ready for traffic by November, 1936.

Work completed in 1935 is listed as follows:

EAST BAY—Five 504-foot through truss spans, east and west cantilever anchor arms, west cantilever arm, completed in 1935.

YERBA BUENA ISLAND—Three 300-foot deck truss spans over the east side of the island completed in 1935 together with towers supporting them. The vehicular tunnel through Yerba Buena Island was fully excavated and lined with concrete by the end of 1935 and construction of the upper deck started. At the beginning of 1935 the vehicular tunnel was in the stage where three small excavations (two at the bottom and one at the crown) had been bored through the wall and the concrete footings for part of the side walls poured.

Therefore, during 1935 it may be said that save for three pilot tunnels, entire excavation of the Yerba Buena Island tunnel was accomplished. In the category of concrete work, all but the footings for the side walls were poured during the year 1935—the footings having been laid in the fall of 1934. Similarly, all the concrete viaduct at the east portal of the tunnel, a section of the bridge approximately 800-feet long, was built during 1935.

WEST BAY—At the start of 1935, the last of the foundation work was being done; some concrete was still being poured at Pier A near Beale Street, San Francisco; and the concrete center anchorage, a mile off the San Francisco shore, was being raised by the superstructure contractor to the height where it was to be taken over by the Columbia Steel Company for cable spinning. The superstructure

EASTERLY TOWER OF SUSPENSION SECTION OF SAN FRANCISCO BAY BRIDGE, 1110 FEET WEST OF YERBA BUENA ISLAND, SHOWING ENTRANCE TO TUNNEL.

Etching by Chesley Bonestell

WESTERN END SAN FRANCISCO-OAKLAND BAY BRIDGE

The landscaped plaza, shown above, is between Harrison and Bryant Streets, San Francisco, and marks the western end of the San Francisco-Oakland Bay Bridge at Fifth Street, San Francisco.

Here the main traffic will flow on to the upper deck of the bridge, which begins its gradual ascent on an easy grade, rising from 11.57 feet at Fifth Street level, to 260.76 feet at the high point of the bridge on the concrete center anchorage, a mile east of San Francisco.

The roadway of the upper deck of the bridge at this entrance way at Fifth Street will be 58 feet wide.

The design of this plaza was created by the Board of Consulting Architects, consisting of Timothy L. Pflueger, Arthur Brown, Jr. and John J. Donovan.

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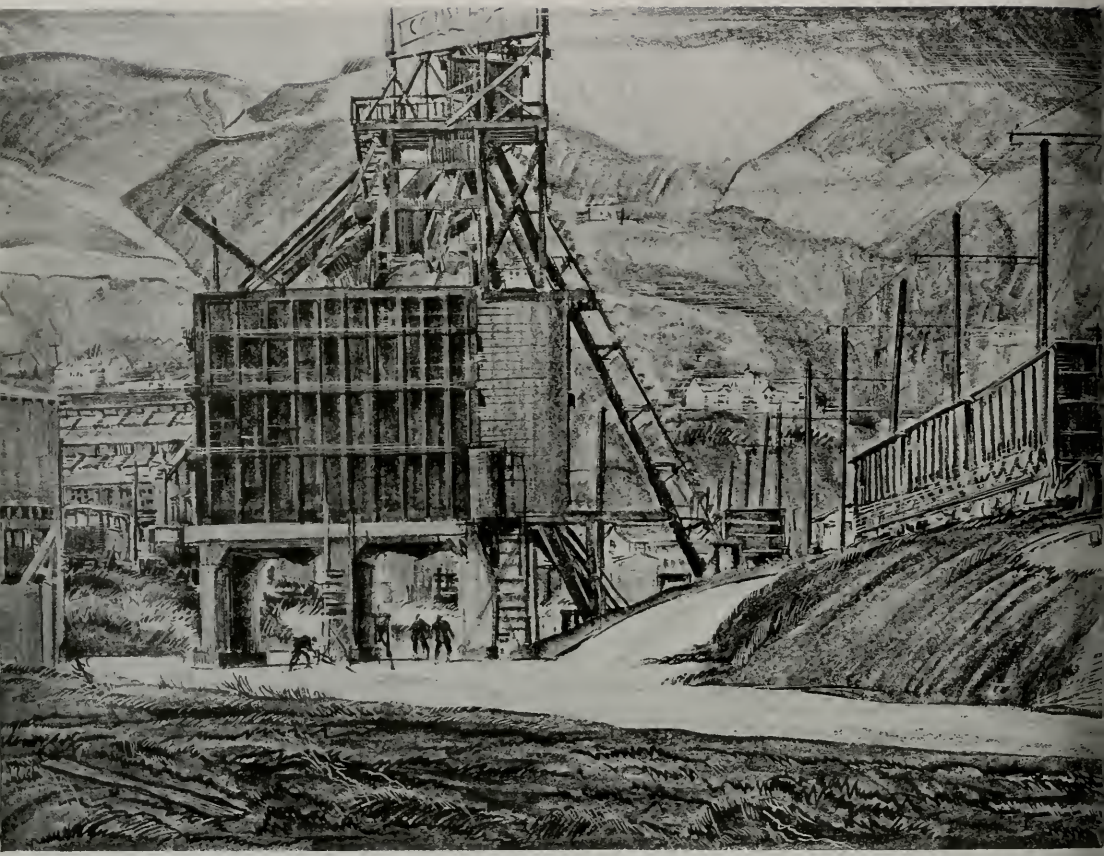
contractor had erected Towers W-2, W-3, and W-6; and had raised W5 to 155 feet with approximately 350 feet to go. The fenders for Pier W-4 and W-3 were not yet complete.

Eyebars on both the San Francisco and Yerba Buena Island Anchorages had been set up and were practically ready for cable spinning, and locker posts at Pier W-1 on the Embarcadero and at Yerba Buena Island Anchorage were under way.

During 1935, catwalks on both the West Bridge and East Suspension Bridge were built and the spinning machinery erected. Spinning was completed during the year on the West Bridge between San Francisco and the Center Anchorage; and half completed on the East Bridge between the Center Anchorage and Yerba Buena Island. Cable bands were bolted around the suspension cables and the first sections of the actual decks of the bridge were being hung from the cables in the last month of 1935.



DRAWING BY HEILBORN

COMPETENT ARCHITECTURAL SERVICE IMPROVES SMALL HOUSE DESIGN

STEPHEN F. VOORHEES, A. I. A. PRESIDENT, REVIEWS 1935 ACCOMPLISHMENTS

IMPROVED conditions in the construction industry are reported from all sections of the United States by the Regional Directors of the American Institute of Architects, according to a survey of progress in architecture and building during 1935 by Stephen F. Voorhees, President of the Institute.

A marked increase in architectural employment, amounting in some localities to an actual scarcity of draftsmen, is a significant feature of the recovery in this industry, Mr. Voorhees declares.

The Institute Directors, Mr. Voorhees reports, urge that governmental participation in the field of low rental housing be limited to procuring and disseminating necessary general information and to furnishing financial aid for such projects, leaving to local agencies such functions as location, design, construction, and administration.

The Directors, he explains, recognize the importance of town planning and other local considerations in the formation and operation of a national program for the development of low rental housing.

"Non-residential building has maintained a steady increase over 1934 totals and continued to increase during the closing months of the year, which normally show a reduction in volume of new construction," Mr. Voorhees says. "Federal assistance by loans and grants of money to finance the building of schools and other public structures is contributing to the improvement in this class of construction.

"Residential building continues to lead the field in volume of new construction. It is not necessary to quote statistics to show the obvious need of this activity. The cessation of building during the past four years; losses resulting from fires; depreciation; the increase in number of families; all are factors in the impending housing shortage.

"Federal housing agencies, by their promotional activities, have directed public attention toward home building and financing on a sound basis. Present building prices and rising rentals are factors favorable to residential building at this time and indicate continued activity in 1936.

"That the architects of the country have devoted much time during the recent years of inactivity in building to a study of the problems of their many sided profession is indicated in the reports of committee chairmen made at the meeting of the Board of Directors of the Institute.

"New materials and methods of construction have been studied and experiments conducted looking toward an improved technique in building that would parallel the improvements made in other lines of production. The new year will see many of these experiments put to the test of practical application to building.

"How to improve the poor quality of design so evident in the average American small house has been the concern of the American Institute of Architects for many years. Efforts to find

a way to apply the architect's talents in this field have met with little success. Lending agencies have been slow to see the advantages of architectural service as a protection to their loans.

"One of the most encouraging experiences of the past year has been the higher rating attained by plans prepared by architects when submitted for government insured morgages as compared with plans prepared without benefit of architectural service.

"To further this work the Directors of the American Institute of Architects endorsed a plan to establish local groups of architects prepared to furnish architectural service in the small house field in a manner to meet local opportunities and demands for such professional service.

"The Directors also tendered to Government agencies promoting better small house building the assistance of the Institute in raising the standards of value by means of the employment of competent architectural service."

In the field of architectural design, there has developed during the economic depression a greater consciousness of the social aspect of the architect's practice, Mr. Voorhees points out.

"Town and regional planning is receiving greater recognition by the architectural schools in preparing architects to broaden their horizons and to participate to a greater extent in social and civic activities. . . . . The value of planned communities and garden suburbs as opposed to the haphazard placing of dwellings so prevalent in our cities is receiving increased attention.

"In view of the prevalent preoccupation of many architects with functional planning, and with full recognition of the research and reasoning so logically expressed in plan and structure, the Institute's Committee on Education believes that the time has come for the expression in our architecture of something beyond the purely utilitarian that might be called either charm or beauty, but without which our creations fail to realize their full possibilities.

"The Committee believes that this quality is more likely to be embodied in our architecture when we recognize our debt to the past and the value of its lessons in meeting the problem of today."

DRAWING BY STANLEY JOHNSON

With the Architects

NEW COUNTY BUILDINGS

The Charities Commission of Alameda County has been authorized by the Board of Supervisors to enter into an agreement with Will G. Corlett, architect, Bank of America building, Oakland, to prepare plans for several additional county hospital buildings in Highland Hospital grounds, the Fairmont Hospital, and the Arroyo Sanitarium, to be erected as WPA projects.

The proposed buildings include a central clinic at the Highland Hospital, central heating plant and dormitory building for the help in the Arroyo Sanitarium, and a ward building at Fairmont. The Federal government has already earmarked upward of $410,000 for part of the work.

WATSONVILLE RESIDENCE

A two-story modern style house is planned at Watsonville for Dr. F. E. Blaisdell, from drawings by W. W. Wurster, 260 California Street, San Francisco, who has also completed plans for a frame apartment building to be built on the south side of Bay Street, east of Hyde, San Francisco, for Nora Kenyon, at a cost of $20,000. G. P. W. Jensen is the contractor.

MARKET BUILDING

Martin J. Rist, Phelan Building, San Francisco, has awarded a contract for a two-story and basement market building for Joseph Capurro to be built at Columbus Avenue and Green Street, San Francisco. Mr. Rist is working on plans for several additional dwellings in El Camino Park, San Jose, for the Pasetta Estate. The same office is also busy on sketches for a hospital.

MILLER AND WARNECKE ACTIVE

New work in the office of Miller & Warnecke, architects, Financial Center Building, Oakland, includes a $10,000 steel and brick store building on Lakeshore Boulevard, Oakland, a two-story Colonial house in Walnut Creek for W. J. Chapman, and a Spanish style dwelling in Hayward.

DESIGNING MANY RESIDENCES

Chester H. Treichel, 696 Cleveland Street, Oakland, has completed drawings for a Colonial dwelling in Oakmore Highlands, Oakland, for A. E. Fifield; a six-room dwelling on Chelton Drive, Oakland, for E. Longfellow and an Early California residence in Redwood City for F. W. Freechtle.

BAKERSFIELD ARCHITECT BUSY

Charles H. Biggar, Haberfelde Building, Bakersfield, has a considerable amount of school work in his office, including an extension to the high school library building, a three-story structure with tile roof, estimated to cost $90,000; an athletic field with grandstand, etc., for the Kern County high school and a new auditorium for the Standard School, the latter a $120,000 project.

SACRAMENTO JUNIOR COLLEGE

Bids are being taken for the second unit, consisting of an 18-classroom structure, to the Junior College in Sacramento. The first unit costing $125,000 is under construction. The architect, Harry J. De Vine, has drawings fifty percent completed for two more units—an assembly hall and wings for the arts, engineering and music departments.

GARDNER A. DAILEY BUSY

The office of Gardner A. Dailey is busy on several new residence projects, besides alterations to the home of Reed Funston at 2672 Vallejo Street, San Francisco, and additions to the residence of Mr. and Mrs. George Oppen at 3665 Washington Street, San Francisco.

HILLSBOROUGH APARTMENTS

J. S. Gould, 251 Kearny Street, San Francisco, is preparing preliminary drawings for a residence apartment building to be built on the Spreckels Estate at Hillsborough, San Mateo County. Howard Spreckels is the owner. The improvements will cost in the neighborhood of $50,000.

PALO ALTO RESIDENCES

John K. Branner, Shreve Building, San Francisco, has completed drawings for a $16,000 brick residence for Dr. Eph Weiss, 1412 Tasso Street, Palo Alto.

Mr. Branner has also completed drawings for a $10,000 Colonial home in Crescent Park, Palo Alto, for James Wallace.

SANTA ROSA HOSPITAL

A contract has been awarded to the P. J. Walker Company, San Francisco, to build a two story steel frame hospital at Santa Rosa for Sonoma County for $223,000. John I. Easterley, Exchange Building, Santa Rosa, is the architect.

BERKELEY RESIDENCE

R. G. De Chene, 364 14th Street, Oakland, has prepared drawings for a $7500 residence to be built in Peralta Park, Berkeley, for Mr. and Mrs. Higbee Williams.

The same architect has completed plans for a residence on Brann Street, near 65th Avenue, Oakland, for Edward Henninger, and a $6000 Spanish dwelling at Ward and Milvia Streets, Berkeley, for Leland S. Hawkins.

COLUSA BANK BUILDING

Plans are being completed by the engineering department of the Bank of America, San Francisco, for a one-story steel and concrete bank building at Colusa. L. H. Nishkian, San Francisco, is the structural engineer.

MERCED HOTEL

Plans have been completed by Messrs. Kent & Hass, San Francisco, for additions and alterations to the El Capitan Hotel at Merced. Construction is expected to go forward within thirty days.

PACKING HOUSE FOR WINTERS

The Winters Dried Fruit Company will erect a new packing house from plans by Dragon & Schmidt, architects, of Berkeley. The building will be part one and part two stories, of reinforced concrete and will cover ground area 60x230'.

$8000 DWELLING

Plans have been completed and a contract awarded for the construction of a two-story stucco dwelling near the Berkeley line in Contra Costa County for V. A. Kimberley. The architect is Warren C. Perry, 260 California Street, San Francisco.

LIVE STOCK PAVILION

New bids are being taken for a reinforced concrete live stock pavilion and race track in Visitacion Valley, San Mateo County. The plans were prepared by W. D. Peugh, 333 Montgomery Street, San Francisco. Bids are scheduled to be opened Tuesday, March 17th.

ALAMEDA COUNTY BUILDINGS

Several new buildings are planned this year for Alameda County. W. G. Corlett has been commissioned to prepare drawings for new units and additions to the Arroyo Sanitarium and Fairmont Hospital.

WILLIAMS & WASTELL BUSY

New work in the office of Williams & Wastell of Oakland, include a $12,000 California Colonial brick veneer residence in Piedmont, a store building on Lakeshore Boulevard, Oakland, and a Mediterranean style residence in Piedmont for Andrew Christ.

PERSONAL

GEO. WELLINGTON STODDARD, architect of Seattle, and Mrs. Stoddard, spent the Christmas holidays at Palm Springs.

HARRY E. HUDSON, of Seattle, attended the Rose Bowl game at Pasadena on New Years Day.

WILLIAM H. WEEKS and HAROLD H. WEEKS, architects, announce the removal of their offices from the Underwood Building to the Balboa Building, 593 Market Street, San Francisco.

SAN FRANCISCO APARTMENTS

R. R. Irvine, architect, of San Francisco, is preparing plans for a three-story stucco apartment building in Marina District, San Francisco, having 18, two and three-room apartments. The same architect has completed working drawings for a three-story frame apartment building to be erected on the north side of Taraval Street, west of 24th Avenue, San Francisco, at a cost of $16,000.

FURNITURE AND DESIGN OF THE HOME

The second part of R. M. Schindler's article on "Furniture and the Modern House," the opening chapter of which appeared in this magazine in December, will be published in the March number. The subject of special furniture design to fit the type of construction of private dwellings (particularly the modern home) is discussed at length.

ATHLETIC FIELD

Plans are being prepared by Charles H. Biggar, architect, Heberfelde building, Bakersfield, for an athletic field, including reinforced concrete bleachers, etc., to be erected on the Lincoln High School campus at a cost of about $100,000. An application for a Federal grant for financing has been filed.

THREE RESIDENCES

F. L. Confer, 2812 Russell Street, Berkeley, reports completion of plans for a California Colonial house in Piedmont for C. G. Morse; a two-story residence in Piedmont Estates for Mr. Beebe and a $7000 residence in Lakeshore Highlands, Oakland, for Mr. Prost.

GRAMMAR SCHOOL BUILDING

Plans have been completed by William Mooser, architect, Monadnock Building, San Francisco, for a reinforced concrete grammar school to be erected in Nevada City for the Nevada City Grammar School District. The cost is estimated at $97,000.

ELK HORN SCHOOL

A $16,000 frame school building is being designed by Joseph Losekann of Stockton for the Elk Horn School District.

DR. ELWOOD MEAD

Dr. Elwood Mead, Commissioner U. S. Bureau of Reclamation, since 1924, died at his home in Washington, D. C., January 26, following soon after the celebration of his 78th birthday. His death was attributed to thrombosis.

Dr. Mead was closely identified with the development of the west for more than half a century as a recognized expert on reclamation problems and rendered distinguished service as chief of the Reclamation Bureau.

He was born at Patriot, Indiana, in 1858, and was graduated from Purdue University in 1882 with the degree of bachelor of science and again in 1884 with the degree of master of science. He was later recipient of a degree in civil engineering from Iowa State College in 1904 and in 1925 was made a doctor of laws by University of Michigan.

After his graduation at Purdue he spent a year with the U. S. Engineers as assistant and for several years held a professorship in Colorado Agricultural School. From 1888 to 1899 Dr. Mead was territorial and state engineer of Wyoming. For the next ten years he was chief of irrigation and drainage investigation, U. S. Department of Agriculture and at the same time professor of irrigation practices at University of California, Berkeley.

In 1907 Dr. Mead was called to Australia as chairman of the Rivers and Waters Systems Commission of Victoria. Returning to America in 1915 he resumed his connection with University of California as professor of rural institutions. His appointment as commissioner, Bureau of Reclamation, was made by President Coolidge April 24, 1924, and he held the position continuously until his death. In that period he supervised a long list of outstanding Federal reclamation projects, most important of which was the Boulder Dam project.

EDWARD J. SCHNEIDER

Edward John Schneider, 60, contracting manager of the bridge and structural department of the Columbia Steel Company, subsidiary of the United States Steel Corporation, died January 25 in Berkeley, following a week's illness with heart disease.

Mr. Schneider was born in Pontiac, Illinois, where he received his early education, later graduating from the University of Illinois, College of Sanitary Engineering.

He spent his entire business life in the design, contracting, and erection of fabricated steel structures, including many of the most important steel buildings and highway and railroad bridges in the West.

In May, 1907, he moved to San Francisco to become contracting manager, first for the American Bridge Company, then for the United States Steel Products Company, and finally, with the Columbia Steel Company, in full charge of office and of all engineering, contracting and erection in the Pacific Coast territory. Among the bridges to come under his charge were the Carquinez Straits Bridge, the Southern Pacific Railway Bridge at Suisun, California, and the new $70,000,000 State Highway Bridge across San Francisco Bay between San Francisco and Oakland, now being completed.

Mr. Schneider was past president of the Engineer's Club of San Francisco and past president of the San Francisco Section, American Society of Civil Engineers. His social affiliations included membership in the Bohemian Club, Commonwealth Club of California, Commercial Club of San Francisco, the Masonic bodies, including the Shrine, and the Claremont Country Club.

WM. E. HIGGINS

Death came to William E. Higgins, one of San Jose's best-known architects, January 26, following a somewhat protracted illness of acute lung congestion and heart trouble. Mr. Higgins succeeded to the business of Wolfe and Higgins upon the death of Mr. Wolfe some years ago. He designed many buildings in Santa Clara county, including public and commercial structures and several hundred dwellings. The deceased was a member of Golden Rule Lodge, F. & A. M. A widow and four children survive.

CHINESE ARCHITECTURE

How Chinese architecture may be adapted to modern-day American needs was discussed by Henry K. Murphy before members of the Oakland Forum at the City Club Theater recently.

Mr. Murphy was formerly architectural adviser to the National Government of China when the City of Nanking was laid out. Later he was architect for the Nanking Revolutionists' Memorial group.

His methods of combining Oriental and Occidental modes of architecture have been employed in the construction of many commercial buildings in China. The lecture was illustrated with pictures and lantern slides.

Mr. Murphy's lecture was the first in a series dealing with art and architecture, to be held under the club's auspices.

NEUTRA AGAIN HONORED

Announcement that Richard J. Neutra, internationally known architect, has been appointed a member of the summer session staff of the University of California at Los Angeles, has been made by Dr. J. Harold Williams, dean of the session.

The U. C. L. A. summer session begins June 27 and closes August 7. Most of the classes are to be open to everyone interested, regardless of previous college training.

HOME BUILDING COSTS VARY IN DIFFERENT SECTIONS OF THE COUNTRY

IT COSTS the buyer of a home nearly half again as much in one section of the country as it does in another to build the same identical one-family house, according to the Federal Home Loan Bank Review. The same home that can be erected in Columbia, South Carolina, for only $4,337, would cost as much as $6,442, in Providence, Rhode Island. Exactly the same dwelling can be constructed in Baltimore for $5,028, but costs $6,033 in Cumberland, Maryland, only 125 miles away. In Chicago, the same home can be bought for $6,361, in Hartford, Connecticut for $5,846, in Oklahoma City for $5,756, in Pensacola for $5,095 and in Colorado Springs for $5,972.

These comparisons are revealed by preliminary reports of the construction cost of an identical dwelling, received from 27 cities in all parts of the United States, which points out that labor supply, transtation facilities and accessibility of materials play the most important parts in determining the local cost of building the average small home. The figures cover only the actual construction outlays and do not include home-mortgage financing costs, which vary widely in different sections.

Recognizing the vital influence of construction costs on the volume of home building and the activity of mortgage lending operations, the Board is developing the first exact index ever attempted to cover the local trend of cost of small home construction in every part of the country, represented by actual data in some 70 cities. Current costs of materials and labor will be included, and the rising or falling trend thus disclosed at three-month intervals for the guidance of prospective home owners and the executives of home-financing institutions.

"The possible uses of accurate local indexes of small-house construction costs are many," the Review says. "The movement of building costs, in relation to rentals, contracts or expands the volume of home construction. It is, therefore, a factor that must be known to all agencies concerned in the building or financing of homes—home-financing institutions, builders, material dealers, and real estate operators. This is particularly true if the home is being built to sell. In addition, current costs of construction determine the replacement cost of any existing building, and so must be included in the making of any appraisal."

The typical home specified as the standard of comparison is a detached house of 24,000 cubic feet volume of sound design and workmanship, containing a living room, dining room, lavatory and kitchen on the first floor, three bedrooms on the second floor and an attic. The exterior is of wide-board siding with brick and stucco trim. A one-car, attached garage is included. Unusual materials and construction features are avoided. The design meets the requirements of the average municipal building code. This home might be placed generally in the $6,000 price class, excluding land value.

The basic data consists of prevailing unit prices of materials and labor, compiled throughout the country by the personnel of the Reconditioning Division of the Home Owners' Loan Corporation, which includes architects and builders familiar with local construction practices. Items for overhead expense and contractor's profit are added.

HEAR EARTHQUAKE TALKS

The Structural Engineers' Association of Northern California, held their first regular meeting for 1936 at the Engineers' Club, January 14. Following an excellent dinner the members and a number of invited guests, listened to a highly interesting and instructive discussion of the Helena earthquakes.

The speakers were F. P. Ulrich, U. S. Coast and Geodetic Survey; H. M. Engles of the Board of Fire Underwriters and H. J. Brunnier. All three spoke from first hand information, having visited Helena during the progress of the quakes. Mr. Brunnier is supervising some rehabilitation work in the area for the Helena Board of Education. Mr. Engles seemed thoroughly conversant with conditions in Montana. Among other things he made it very emphatic that much of the damage to schools and other public buildings was due not so much to faulty materials and poor construction as to inferior design. Many of the older buildings seemed to stand up under the upheavals better than the newer ones.

The Association has reelected John B. Leonard president for 1936.

K. E. PARKER NAMED PRESIDENT

The directors of Central California Chapter, Associated General Contractors, have elected K. E. Parker, San Francisco building contractor, president of the Chapter for 1936. Mr. Parker succeeds Geo. Greenwood of the P. J. Walker Co., who has been president since the Chapter was organized in 1934.

Other new officers are: John Cahill, vice-president, and R. Walberg of Lindgren and Swinerton, treasurer. W. E. Hague is secretary-manager.

The Chapter board of directors for 1936 is composed of John Cahill, George Greenwood, H. H. Hilp, K. E. Parker and R. Walberg.

ARCHITECTS CONVENE THIS YEAR IN HISTORIC CITY OF WILLIAMSBURG, VA.

THE A.I.A. Board of Directors have adopted the recommendation of the convention committee that the 68th convention be held at Williamsburg, Va., May 5 to 8.

Hotel accommodations in Williamsburg are inadequate for an Institute convention; but at Old Point Comfort, 38 miles distant over good roads, the modern Hotel Chamberlin has adequate accommodations. It is proposed to establish headquarters at Old Point Comfort and hold sessions there and at Williamsburg using automobiles busses for transportation between the two points.

The significance of Williamsburg as a center of historical and architectural interest may be recalled by the following brief description:

In 1699, following the burning of Jamestown, the General Assembly passed an Act directing the building of a Capitol and the City of Williamsburg at what was then known as Middle Plantation. Previously, the main building of the College of William and Mary, designed by Sir Christopher Wren, had been built at Middle Plantation. This building became the western terminus of the main axis of the city plan, the new Capitol building forming the eastern terminus. A cross axis is terminated at the north by the Palace of the Royal Governors. The plan is notable for its openness and for the effective placing of its public buildings.

The city thus founded grew rapidly and soon became the center of the political, educational and social life of the Virginia colony and held this preeminence until 1780, when the seat of government was removed to Richmond. Virginia during this period was the most wealthy and influential of the colonies and its Capitol City reflected in its architecture and its gardens the culture and refinement of the best element of the colonists.

The Civil War and a period of prolonged depression thereafter contributed largely to the decline of this once distinguished city and many of its precious buildings and gardens disappeared.

The story of the restoration of Williamsburg is too well known to require retelling.

The Institute Directors believe that the holding of the convention in this environment will make a strong appeal to the membership. The cooperation of Williamsburg Restoration, Inc., and the College of William and Mary is assured. The latter has reserved Phi Beta Kappa Hall for the convention meetings and has invited the Institute to be their guests at luncheon on one of the convention days.

TACOMA BUILDING PROGRAM

The Tacoma Society of Architects is lending enthusiastic support to a $5,000,000 residential building program backed by the Pacific First Federal Savings and Loan Association of Tacoma.

Architects participating in the program are: Roland E. Borhek; Heath, Gove and Bell; A. Gordon Lumm; Mock and Morrison; Silas E. Nelsen; Russell, Lance and Muri; Stanley T. Shaw; and Sutton, Whitney and Dugan.

NEW BOOKLET

Richards-Wilcox Manufacturing Company of Aurora, Illinois, have recently issued a very interesting and well arranged brochure, "DOORWAYS."

It fittingly illustrates several of the doors and doorway hardware manufactured by this company. The wide-awake architect and builder, as well as the general contractor, will find it worth their while to write for a copy of the brochure which will be mailed promptly upon receipt of request.

SAN DIEGO CHAPTER

San Diego Chapter, The American Institute of Architects, held its annual meeting January 16, and elected the following officers: President, Frank L. Hope, Jr.; Vice-President, Ray Alderson; Secretary, Sam W. Hamill, and Treasurer, Richard S. Requa.

William Templeton Johnson and William P. Lodge were elected to the Board of Directors.

PROVISIONAL CERTIFICATES

At the last meeting of the California State Board of Architectural Examiners (Northern Division) Provisional Certificates were granted to the following:

Chester O. Root, Hotel Del Monte, Del Monte; Robert E. Riggs, Route 80, Berkeley; Irving F. Brown, 1408 Burlingame Avenue, Burlingame.

SKETCH COMPETITION

Preparations for holding the annual Summer Sketching Competition for Washington architectural students and draftsmen are being made by George Gove of Tacoma, chairman of the educational subcommittee of the Washington State Chapter, A.I.A. Prizes will be offered in the several different classes.

MUSIC HALL

Working drawings have been prepared by Wm. H. and Harold Weeks, architects, Balboa Building, San Francisco, for a reinforced concrete and brick veneer music hall in Santa Rosa.

NORTHERN CALIFORNIA CHAPTER

The regular monthly meeting of Northern California Chapter, the American Institute of Architects, was held at the St. Germain Restaurant, San Francisco, Tuesday evening, January 28; President Will G. Corlett, presiding.

Guests included Henry Killam Murphy, A.I.A, Prof. Knight and Messrs. Funk and Graybar.

Prof. Cyril Knight of the University of New Zealand at Auckland, was introduced by Mr. Hays, Mr. Graybar of Wisconsin, was introduced by Mr. Evers.

The Committee on Practice through its chairman, Mr. Gutterson, presented a tentative report on the proposed schedule of minimum fees which had been assigned to it for study. It was stated that the schedule had been approved by Southern California Chapter, and conditionally by the State Association, subject to the approval of Northern California Chapter.

The report favored the principle of higher fees without committment to definite percentages and suggested 6% as the minimum basis with reasonable higher fees for types of buildings offering greater difficulty in performance of service.

The members were asked to express their re-action to the schedule so that reply could be made to the other organizations. Mr. Evers felt that the recommendation of the Chapter should be more specific and stated his approval of the schedule in toto. Messrs. Johnson, Hays, Garren and others offered pertinent observations.

Mr. Evers moved that the recommended Schedule of Fees as proposed by Southern California Chapter be approved as a reasonable charge for architectural services. The motion was carried and the committee was thanked for its efforts in the matter.

The death of Harris Osborn, Associate, was announced as having occurred October 22, 1935. It was instructed that a committee be appointed to draft a fitting resolution of respect.

The motion of Mr. Michelsen was unanimously approved that the State Department of Public Works be requested to establish a district office in San Francisco for the convenience of the profession and construction industry in checking plans for schools and other public works.

Mr. Bakewell recommended that the Competition Committee consider the advisability of listing the names of jurors in competition programs. This knowledge, he thought, might have weight with an architect in deciding whether to enter or not. The committee was instructed accordingly.

Business was brought to a close at this point and Henry Killam Murphy, A.I.A., was introduced as the guest speaker. Mr. Murphy has spent many years in China in private practice and publicly as architectural advisor to the Chinese Government.

Current Chinese architecture was the theme of his talk. The audience was taken back a few centuries by lantern slide illustrations of the old Chinese work, while the salient features embodied in that era were pointed out. The current work which was next shown was referred to as the Rennaissance of Chinese Architecture. In this, it was observed, the dominant Chinese characteristics prevailed, with modification suited to modern form of construction and modern requirements

J.H.M.

MODERNIZATION BRINGS PROFIT

Norman J. Rodder, in Hotel Management, writes: Income of a Chicago hotel was jumped from $150 to $1,000 a month by modernization. It is a four-story building. Designed as a bachelor hotel, with 15 rooms and one bath on each floor, the owner complained she couldn't even give the rooms away. An architect advised her to cut its 60 rooms to 40, using the lost 20 to make a bathroom and closet for each new unit. He did this by splitting in half the center one of every three adjoining rooms, thus putting the new bathrooms back to back, saving labor and piping. They got white fixtures against walls of rose ceramic tile, bordered in black, every tub with shower. Bedrooms were redecorated and refurnished in latest style. Work started on the fourth floor, which was fully rented before the third could be completed. Entire modernization, including improvement of heating plant, cost $7,500, which was financed by the plumbing contractors, who agreed to take $300 a month in payment, with interest, thus making the changes pay for themselves out of increased rentals in less than three years.

MODERNIZING FARMHOUSES

Ways of bringing farmhouses up-to-date are described in a new Farmers' Bulletin No. 1749, Modernizing Farmhouses, issued by the U. S. Department of Agriculture. It contains comprehensive information on costs and details on remodeling to meet a variety of needs.

In it are floor plans, photographs or sketches of 13 typical farmhouses which have been remodeled by their owners, with descriptions and costs of the work. There are also floor plans, worked out by state agricultural colleges, for remodeling five common types of houses. Alternate plans for most of the houses suggested by the Bureau of Agricultural Engineering are also shown as well as floor plans of the original homes.

The plans are of typical farmhouses in various sections of the country and are for one- and two-storied structures. Sizes of houses range from 3 rooms to 10, the latter allowing separate apartments for two families.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors.

NOTE—Add 2½% Sale Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $35 to $40 per 1000 laid, (according to class of work).

Face, $75 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.10 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $12.00 job cartage.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job)

carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Discount 5%.

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—**50c per sq. ft.**

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.80 per ton
No. 4 rock, at bunkers	1.75 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	2.10 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.75 per ton
River sand, at bunkers	1.80 per ton
Delivered bank sand	1.20 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement, 2.50 per bbl. in paper sks.

Cement (f.o.b. Job, S. F.) $3.00 per bbl.

Cement (f.o.b. Job, Oak.) $3.00 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Calaveras White ..... $6.00 per bbl.

Medusa White ..... $8.00 per bbl.

Forms, Labors average $30.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.

4-inch concrete basement floor ..... 12½c to 14c per sq. ft.

4½ inch Concrete Basement floor..... ..... 14½c to 16c per sq. ft.

2-inch rat-proofing ..... 7½c per sq. ft.

Concrete Steps ..... $1.40 per lin. ft

Dampproofing and Waterproofing—

Two-coat work, 15c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.00 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches).

Knob and tube average $7.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 50 cents; clay or shale, 80c per yard.

Teams, $10.00 per day.

Trucks, $18 to $25 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot.

Plate 75c per square foot.

Art, $1.00 up per square foot.

Wire (for skylights), 35c per sq. foot

Obscure glass, 26c square foot.

Note—Add extra for setting

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron—Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$33.00 per M
No. 2 common	28.00 per M
Selection O. P. common	38.00 per M
2x4 No. 3 form lumber	24.00 per M
1x4 No. 2 flooring VG	60.00 per M
1x4 No. 3 flooring VG	50.00 per M
1x6 No. 2 flooring VG	60.00 per M
1¼x4 and 6, No. 2 flooring	65.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	38.00 per M
No. 1 common run T. & G.	31.00 per M
Lath	7.00 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.00 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple	$120.00 M ft.
1 1-16x2¼" T & G Maple	132.00 M ft.
⅞x3½ sq. edge Maple	140.00 M ft.

	13-16x2¼" T&G	⅜x2" T&G	5-16x2" Sq.Ed.
Clr. Otd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Otd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	5.00
Brownskin Pro-tect-o-mat, 1000 ft. roll	10.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.

Nails, $3.50 base.

Sash weights, $45 per ton.

Millwork—

O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.

Dining room cases, $7.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.

For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work ..... 29c per yard
Three-coat work ..... 40c per yard
Cold Water Painting ..... 10c per yard
Whitewashing ..... 4c per yard
Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lbs. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Medusa finish, No. 18 gauge wire mesh	2.00

Wood lath, $6.00 per 1000.
2.5-lb. metal lath (dipped) ..... .17
2.5-lb. metal lath (galvanized) ..... .20
3.4-lb. metal lath (dipped) ..... .22
3.4-lb. metal lath (galvanized) ..... .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale ..... $1.25 per hour
Lathers Wage Scale ..... 1.25 per hour
Hod Carriers Wage Scale ..... 1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. la according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardwar $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed

Steel—Structural

$100 ton (erected), this quotation is a average for comparatively small quan tities. Light truss work higher. Plai beams and column work in large quan tities $80 to $90 per ton cost of stee average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in plac
Sandstone, average Blue, $4.00, Bois $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. place.

Store Fronts—

Copper sash bars for store fronts, corne center and around sides, will averag 75c per lineal foot.

Note—Consult with agents.

Tile—Floor, Wainscot, Etc.—(See Dealers

SAN FRANCISCO BUILDING TRADES WAGE SCALE

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestos Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	9.00
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.68
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	$9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	$7.2
Stone Cutters, Soft and Granite	6.8
Stone Setters, Soft and Granite	8.0
Stone Derrickmen	7.2
Tile Setters	8.0
Tile Setters' Helpers	5.0
Tile, Cork and Rubber	7.2
Welders, Structural Steel Frame on Buildings	9.6
Welders, All Others on Buildings	8.0
Auto Truck Drivers—Less than 2,500 lbs.	5.5
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.0
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.5
Auto Truck Drivers—6,500 lbs. and over	7.0
General Teamsters, 1 Horse	5.5
General Teamsters, 2 Horses	6.0
General Teamsters, 4 Horses	6.5
Plow Teamsters, 4 Horses	6.5
Scraper Teamsters, 2 Horses	6.0
Scraper Teamsters, 4 Horses	6.0

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after mi night shall be paid time and one-half up four hours of overtime and double time ther after (provided, that if a new crew is e ployed on Saturdays, Sundays or Holide which has not worked during the five prece ing working days, such crew shall be pe time and one-half. No job can be considere as an emergency job until it has been reg tered with the Industrial Association and determination has been made that the jo falls within the terms of this section).
14. Recognized holidays to be: New Year's Da Decoration Day, Fourth of July, Labor Da Admission Day, Thanksgiving Day, Christm Day.
15. Men ordered to report for work, for whom employment is provided shall be entitled two hours' pay.
16. This award shall be effective in the City a County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, Stair Builders.

FIREPROOFING OF STRUCTURAL STEEL

by S. H. Ingberg

The need for some form of fire protection for metal members became evident in the early days of metal-framed construction following fires producing general collapse of unprotected structures. This yielding under load at elevated temperatures should be expected for structural steel, considering that rolling is done at temperatures well below those to which it may be heated if exposed unprotected in building fires.

The strength of structural steel under short-time tests in tension, and in compression for relatively stable sections, is higher in the temperature range 300 to 600°F than at ordinary temperatures, the increase being as much as 25 percent at temperatures near 450 to 500°F. This, however, has no decided significance as far as fire resistance of unprotected members is concerned, since exposed in any fire of consequental import, they would attain higher temperatures in a comparatively short time. However, this property gives in effect an added factor of safety for members that are protected so that they will not attain temperatures exceeding these limits.

The main object of structural protections is to prevent the occurrence of temperatures in the metal that induce failure under the supported loads. For recognized design working stresses, this means that average temperatures over the stressed sections of structural steel members must be maintained below about 1000°F. This has been confirmed by tension and compression tests of steel specimens and also by fire tests of building members.

It was formerly usual in public regulations such as building codes, to require a minimum uniform thickness of protection irrespective of type of material. As knowledge increased on the value of the materials applied, as judged by performance in representative fire tests, the more effective insulations were required to be applied in less thickness than the others. Of late years, thickness requirements except as backed by results of tests, have been superseded in part by performance requirements in terms of fire resistance developed in prescribed tests. While this places the materials on a fairer basis with respect to each other, unless care is taken in setting performance limits, protections may be prescribed not commensurate with the fire severities to be expected in given locations.

While much remains to be done on development of basis for estimating fire severity, judicious application of available data will enable the desired results to be attained with the use of the least bulk, weight, and cost of protecting materials. The methods of application as well as the properties of the materials are important in this respect. Thus, depending on choice of aggregates, identical columns protected with a 2-inch thickness of Portland cement concrete will

The man who whispers down a well
About the goods he has to sell
Won't reap the gleaming, golden dollars
Like one who climbs a tree and hollers.

TRUE today as in April, 1905 when this homely bit of wisdom was printed in Volume One, Number One of THE ARCHITECT AND ENGINEER. It is quite probable, too, that the very first advertisement was delivered "from the tree tops" . . . Picture caveman Ig with his stock of selected rocks, the sharpest for use as axe heads, the heavier ones for cave walls, rude fireplaces and such. There were no newspapers, radios (lucky Ig), nor magazines in those days. The only way in which Mr. Ig could make known his wares and attract cave-dwellers from surrounding hills to come and trade meat, skins and maybe wives, for supplies from the Ig Materials Co. (the original building supply house) was to **climb a tree and holler.**

So down through history . . . Paul Revere with his horse, the town crier with his bell, the redskin with his smoke-signal broadcast (first blanket coverage) . . . the evolution of the advertising medium continued.

It was not until the year 1905, that the then adolescent Western building industry was given a much needed monthly architectural journal, in the format of THE ARCHITECT AND ENGINEER. Since then building in the West has steadily advanced (excepting the recent respite while prosperity was "on strike") and this publication has grown with it, faithfully mirrored development and achievement, during the more than **thirty** intervening years. The resultant widely recognized medium . . . reaching all factors (architects, engineers, contractors, owners) in the specification and purchase of building materials . . . is available to those firms planning aggressive sales promotion during the coming months.

Incidentally, your advertisement in THE ARCHITECT AND ENGINEER, far from a mere "whisper," will be a good healthy "holler" heard by (or rather, read by) a substantial proportion of all your prospects in the allied building interests.

THE ARCHITECT & ENGINEER
68 POST STREET . . . . . SAN FRANCISCO
832 W. 5TH STREET . . . . . LOS ANGELES

MODELS DEPICT DEVELOPMENT OF THE DETACHED DWELLING

OF SPECIAL appeal to those whose interests lie in the planning or construction of homes is an exhibit demonstrating the development of the detached dwelling, at the New York Museum of Science and Industry in the R. C. A. Building, 30 Rockefeller Plaza, New York City.

A series of eleven models, built to the scale of one-quarter inch to the foot by Helen and Hugh Perrin, of Boston, shows the progression of the housing idea from the perched-on-stilts dwellings of river and jungle life thousands of years before Christ, to the home of the well-to-do 1936 suburbanite. Each model represents a sharply distinctive step in the history of home-building.

A typical Neolithic Lake village of about 12,000 B.C. begins the series. Roughly constructed of plaited twigs, straw, reed or leaves, this primitive home stands on a high platform well out from the shore of lake or river so that a bridge connecting with the land could be pulled up when necessary for defense. A single large platform accommodates several houses, a number of families occupying each house. The tiny figure of a man outside one of the houses, bent over one of the coils of fish line scattered about the platform, illustrates the main occupation of the community—fishing through holes in the platform. Occasionally, as indicated by a man putting out to sea in a rough boat in a corner of the model, the fishing was carried on in the open water. Traces of ancient villages of this type are still to be found along the Congo, the Amazon and other large rivers, and primitive tribes of Java, Sumatra and Borneo still use this plan of building construction.

Egyptian House

Moving up some 8,000 years, the second unit in the exhibit shows an Egyptian house of about 4,000 B.C. The home of a wealthy Egyptian has been chosen for this illustration, a structure equivalent to what might be a $50,000 house today. Set in the desert, against a background of pyramids and sand hills, this flat-roofed, three-sided building is surprisingly surrounded by green shrubbery and gay flowers, the latter as characteristic of a home of this era as the stone or sundried mud which built the house itself. The ancient Egyptians, it is reported, were so fond of flowers and growing things that they transported earth for long distances in order to make their gardens in the midst of the desert. The interior court, enclosed on three sides by the body of the house and its two wings, testifies to the outdoor life led by the people of that land and time. In the midst of the court stands the family hearth for cooking, off to one side is a religious niche, while a shaded loggia afforded opportunity for rest and relaxation. A bed on the flat roof, reached by an outside staircase, shows where most of the sleeping was done.

Also built around a court, but far more sheltered from the weather and definitely designed for indoor living rather than the Egyptian opposite, is the Roman house of about 400 A.D., which is the third model in the display. A special feature to be noted is the construction of the roofs, sloping toward a central opening, so that rain might be diverted into the pool in the center of the courtyard.

The fourth model is that of two Saxon houses, three hundred years later. One is little more than a lean-to shelter, built of forked sticks with a roof of reeds covered with sod. Grass, growing freely on the sod of the roof, offered good grazing to the family pig and goats, and the tiny figure of one of the latter perched on the roof above the head of the householder sitting outside the door, shows that they availed themselves readily of the privilege. The second house in this unit was evidently constructed by the owner at a later and more prosperous period of his life. A long, low building, designed with a special eye to the accommodation of an increasing number of oxen, its door had a high threshold and low head so that the visitor must stoop to enter and, in this highly unstrategetic position, could be dispatched easily with a blow

FIREPROOFING OF STRUCTURAL STEEL

(Concluded from Page 63)

develop fire resistance ranging from 1½ to 7 hours. A large range obtains also for tile and block protections, methods of application being particularly important.

It is also noted that aside from the minimum requirements for safety, which it is the intent of building codes to achieve and which concerns mainly prevention of major collapse, protections can be applied that will greatly decrease the fire damage to the structural members and the protective materials as well. Here also properties of the materials as well as manner of application must be considered. The degree of protection is also important since the lower the temperature attained in the metal, the less destructive effects should be expected from differential expansion between the portions of a member and between individual members of a structure.

from a club if the home-owner was not attracted by the looks of his caller. A small third building, built on a high platform, stands at one side, and was used partly as a storehouse and partly as a retreat for the ladies of the household during the day.

An armored knight, riding off on horseback with his lance upright in his hand, adds a picturesque touch to the fifth model, that of a Norman manor house of the 13th century. The building is of the semi-castle type and combined a thatched roof with stone walls. Tall and narrow arched windows were scarcely more than slits in the thick walls, the upper ones with wooden shutters and the lower ones protected by iron gratings.

15th Century Home

In the sixth unit of the display, a substantial, half-timbered English house of the middle 15th century exhibits a lavish use of glass in its windows, mute evidence of a more peacetul spirit in the countryside. Slate roofing, elaborate chimneys and pleasant ornamentation in brick and wood likewise attest to an architectural mood changing slowly from the defensive to the cultural.

Model 7, a Georgian house of the middle 17th century, introduces the typical brick structure of the period, characterized by much emphasis on balance and symmetry. The main body of the house, with the doorway approached by a double stair flanked by a delicate iron railing, is supported on each side by a wing, probably a library on one side and the kitchen on the other.

By way of abrupt contrast, the eighth model is that of a 17th century Iroquois Long House, a thing of forked poles, lashed rafters and bark shingles, standing in the center of a strong stockade. These Long Houses of the Iroquois Indians were in reality an early type of apartment house, the model shown representing living accommodations for eight families.

Still in the 17th century, but well on to its end, is the adapted Early American house shown in the ninth model. The wide boards, small windows and front overhang are familiar features, while the wagon wheel leaning against the barn, the pump in the middle of the backyard, and the woodpile at the kitchen door provide a homely authentic atmosphere.

American Victorian House

The advent of the jigsaw, making it possible to cut out of wood quickly and cheaply all sorts of ornaments formerly carved with great labor out of stone, is conspicuously celebrated in the American Victorian house which constitutes the tenth model. All dressed up with fancy trimmings, the comfortable, if somewhat fussy-looking residence is a counterpart in miniature of numerous dwellings still bearing witness to past elegance in the American scene. An "old-fashioned" house, the observer says of it today, passing it by for architectural types closer to his own generation. A bird house high on a pole, and a square summer house, dominate the front lawn, with a bird bath occupying the center of the side lawn. A lady driving smartly up to the door with her tandem of horses and her spotted coach dog running behind, adds the final touch of local color.

A contemporary American suburban home completes the series. The model-makers chose to depict an adapted English-type house, with the familiar ground-level entrance, built-in garage, driveway and flower-beds—what might be described as a good house in a good suburb. The figure of the home-owner, inspecting with apparent dismay a rear tire of his coupe, just emerging from the garage, supplies the last necessary touch of reality to this picture of life in Suburbia.

The building of the models for the exhibit was done under the supervision of Albert Farwell Bemis and John Burchard, II., author of "The Evolving House—A History of the Home."

CONTRACTOR BENEFITS BY RULING

According to a recent ruling of Judge W. D. Held, of Sonoma county, equity should afford relief to a contractor making a bona fide error in compiling a bid, against forfeiture of a check submitted with the bid guaranteeing the bidder would enter into a contract if awarded the job. The ruling restrained the Healdsburg High School District from confiscating a certified check given by George Petersen, building contractor of San Leandro, guaranteeing a proposal for erection of an addition to a high school building. The court found that Petersen had made an honest mistake in his bid and that the school district had suffered no damage by the contractor's refusal to accept the job.

NEW KAWNEER PRODUCT

Recently published manufacturer's literature includes folders on two new products of The Kawneer Company, Niles, Michigan.

The Kawneer Medium Sealair Window is intended primarily for commercial use and is of slightly heavier construction than the Kawneer Light Sealair Window, which is for residential use.

The new Kawneer extruded store front construction, with continuous spring grip, supplements the well-known Kawneer rolled store front construction. Thus Kawneer offers the architect and builder a choice of either extruded or rolled construction with ample resiliency and glass protection in either case. Full sized architect's details are available in addition to the six-page file size folder.

METAL CRIBBING PROVIDES EXCELLENT RETAINING WALL FOR COUNTY HIGHWAY NEAR MORAGA, CALIFORNIA
1—Preliminary excavation for the wall. 2—Placing the first course of cribbing units on correct line and batter. 3—Assembling or erecting the cribbing courses. 4—Cribwall complete, ready for the remainder of the backfill. 5—Completed job. The roadway above at the right can be visualized.

LOS ANGELES CHAPTER ADDRESSED BY SCHOOL ARCHITECT

At the February 11th meeting of Southern California Chapter, A.I.A., A. S. Nibecker, Jr., architect for the Los Angeles Board of Education, gave an address on "The Use of Permanent Materials and Simpler Plans, Rather Than the Construction of Architectural Monuments, in Modern School House Design."

Commenting on plans that are prepared for Los Angeles school buildings, Mr. Nibecker said that one thing most architects forget when submitting preliminary drawings is a plot plan, which must be provided. The proper location of the building on the site is of importance, as is the position of the structure in order to take best advantage of natural light.

Other points stressed in school house design were the provision of toilet facilities on the ground floors of elementary schools, stairways at extreme ends of the buildings (high school stairs to be twice the width of those in elementary schools), and equal toilet facilities on all floors of high schools.

Since the earthquake of 1933, according to Mr. Nibecker, a lot of useless ornamentation and projections have been eliminated. Windows are provided for light and not architectural effect, and the building must stand without a lot of maintenance and must be what he termed "kid proof."

The width of the walls, he said, must be kept within reason and the corridors kept at the proper width. The school board expects at least 50 per cent of instructional area in all buildings and considers this an economical plan.

The board looks to the architect for complete professional services and for actual inspection of the work in return for the fee paid, which is considered ample for good service and a satisfactory profit to the architect.

(Continued on Page 71)

ORIGIN OF NAMES OF CALIFORNIA COUNTIES

This is the fifth article in the series giving deriviation of the names of California counties, the first appearing in September:

KINGS COUNTY—Created March 22, 1893. This county was created out of the western part of Tulare county, and took its name from Kings river, which, according to history and tradition, was discovered in 1805 by an exploring expedition and named Rio de los Santos Reyes (the "river of the holy kings"), from which it obtained its present name.

In the lower center of the great San Joaquin valley lies one of the smallest, one of the youngest, but one of the richest and most resourceful counties of the state. Kings county is known as "The Little Kingdom of Kings" because of the wealth and diversification of the products of this area. In 1852 there were only 100 settlers in the region now known as Kings and Tulare counties, and this area was a part of Mariposa county. In 1852 Tulare was formed, but it was not until 1893 that Kings came into existence by divorcing itself from Tulare. In 1908 about 100 square miles were taken from Fresno county and added to Kings.

Tulare Lake, at one time covering thousands of acres, a paradise for game and waterfowl, gradually has been drying up and as early as 1881 settlers began to take up land in the lake bed. After years of tremendous reclamation work, practically the entire lake bed now is under cultivation, producing abundant crops of wheat, barley, corn, alfalfa and cotton. Peaches are the most important of a large variety of fruit crops. Poultry raising is a rapidly growing industry and Kings ranks second in butter manufacturing in California. Kings has one of the greatest oil fields in the world, Kettleman Hills being mostly within its territory. The assessed valuation of Kings has nearly doubled since 1928. Population: 25,385. Area: 1159 square miles.

LAKE COUNTY—Created May 20, 1861. This county derived its name because of the many charming lakes within its borders.

This county presents enchanting scenery, offers opportunities in all lines of agricultural endeavor, proximity to the leading markets, is known as a land of highways and is one of the leading playgrounds in Northern California.

The high mountains surrounding the county probably acted as a barrier to the white man until the early forties, at which time a few Russians came from Fort Ross and Bodega, in what now is known as Sonoma county, to establish parts of this region for their czar. General Vallejo and his brother claimed title to a large grant of land in 1847. Soon a few other white pioneers settled and raised thousands of head of cattle, undisturbed by the 6,000 peaceful Indians who called this land home. However, the influx of people began to crowd the docile Indians and a few endeavored to establish rule over them, finally leading to much bloodshed.

Indian folklore and early California history do not reveal when this region experienced a gigantic volcanic upheaval. There are high mountains and peaks, numerous streams, scores of mineral springs, a dozen valleys and the largest lake of fresh water in the state. There are more mineral springs in Lake than in the countries of Europe, visited annually by 75,000 persons. Clear Lake, the Indian name for which is "Lupoyama," is one of the prettiest bodies of water in the world and covers an area of 84 square miles. Mount Konocti, known locally as "Uncle Sam," rises to a height of 3000 feet and almost divides the lake. Hunting and fishing lure the sportsman.

Lake has famous quicksilver mines which have yielded more than $4,000,000. Lake's leading crops in order of their importance are pears, walnuts, hay, grapes, barley and wheat. Live stock and lumber industries

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are prosperous. Population: 7,166; area: 1238 square miles.

LASSEN COUNTY—Created April 1, 1864. The name of this county was taken from Mount Lassen, the only active volcanic peak in the United States, which was named for Peter Lassen, a native of Switzerland, one of General Fremont's guides and a famous trapper, frontiersman and Indian fighter, who was killed by the Piutes at the base of this mountain in 1859.

This county has an unusual history. Barely over the stage of pioneering, compared with other counties, rail lines and highways now serve various districts, the lumbering industry is one of the greatest of its kind in the west, cattle and sheep raising are very important, and Lassen is a popular vacation land. The minimum elevation of the county is 3949 feet.

Peter Lassen, rugged adventurer, Isaac Roop, first territorial governor of Nevada, and Lieutenant John C. Fremont, youthful army officer, were the early pioneers. Lassen crossed the plains from Missouri in 1839 en route to Oregon. In 1844 he settled on his grant on Deer Creek. Three years later he brought another party out from Missouri and settled in Indian Valley, Plumas county. In 1855 he went to Honey Lake Valley where he lived until he was killed by Indians in 1859. Historic Lassen records relate:

"Believing themselves to be out of California, the settlers of Honey Lake Valley fought off Plumas county officials who claimed juisdiction over them. As a consequence Honey Lake Valley became a sort of "No Man's Land," harassed by savages on all sides and infested by outlaws. In 1856 the settlers, in the belief they were in western Utah, organized a territory about the size of Nevada and called it "Nataqua." Peter Lassen was elected surveyor and Isaac Roop recorder. Later the settlers joined those of the Carson Valley country in their efforts to organize a territory and call it Nevada. The government was slow in acting and they organized a provisional territorial government and elected a legislature and a full set of officials. Roop was named governor. Before long, however, the government organized the territory and in 1861 James W. Nye was appointed governor. Honey Lake Valley was put into Lake county, Nevada. After repeated clashes with Plumas county officials, a joint survey was made by California and Nevada and Honey Lake was found to be in Plumas county. The people of the valley asked to be set off into a new county and in 1864 the California legislature granted their request. The new county was named Lassen." Population: 12,589. Area: 4531 square miles.

LOS ANGELES COUNTY—Created February 18, 1850. This is one of the original twenty-seven counties of California. The words "Los Angeles" in Spanish literally mean "the angels" and are a contraction of the original name "Pueblo del Rio de Nuestra Senora

La Reina de Los Angeles de Porciuncula" ("the town of the river of Our Lady, Queen of the Angels"). It will therefore be observed that Los Angeles really was named for the Virgin Mary, commonly called "Our Lady of the Angels" by the Spanish. On September 7, 1781, Governor Felipe de Neve issued orders from the San Gabriel Mission for the establishment of a pueblo on El Rio Nuestra Senora de Los Angeles and under the protection of Nuestra Senora La Reina de Los Angeles (Our Lady, Queen of the Angels), the mission by this name having been dedicated three days before, having practically the same title. This pueblo in time became known as the Ciudad de Los Angeles, "the City of the Angels," and it is from this that the county derived its patronymic.

This county has almost half the population of California. Its growth in the last decade has been one of the wonders of America. It is nearly four times the size of Rhode Island. In 1910, the population was 504,131, or 124 per square mile. The 1930 census reveaied a population of 2,208,492, or 536 per square mile. Los Angeles is the greatest agricultural county in the state and the 1920 Federal census ranked it first among all the counties in the nation.

Los Angeles harbor was built at a cost of many millions, $10,000,000 of which was contributed by the national government. It is the world's leading oil exporting and lumber importing port. The county, due to its vast oil and natural gas production, ranks first in mineral production. Nearly every commercial product known to California is produced on its 12,653 farms. Citrus fruits head the list of these products.

The county's motion picture industry stands as a gigantic structure spoken of only in terms of millions of dollars. The greatest electric interurban system in the world is here with over 1200 miles of tracks serving fifty-four incorporated cities in four counties and transporting annually 125,000,000 passengers. Population: 2,208,492; Area: 4115 square miles.

MADERA COUNTY—Created March 11, 1893. "Madera" in Spanish signifies "timber," and the county got its name from the town of Madera, situated within its limits, which town originally was surrounded by groves of trees.

Fertile plains and valleys, rich foothills carpeted by vast stretches of orchards, a wealth of mineral deposits and scenic mountain regions with dense forests of pine and fir, are Nature's gifts to Madera. Within the county lies a part of Yosemite National Park and a large portion of the Sierra National Forest. In northeastern Madera is one of California's national monuments, a strange formation of rock called the Devil's Postpile composed of tall posts of hard rock, six-sided and fitting closely together, resembling the Giant's Causeway in Ireland.

An attraction to motorists is the Madera-Mariposa Big Tree Route known as "Discovery Road," traversing much of the territory over which Major Savage and

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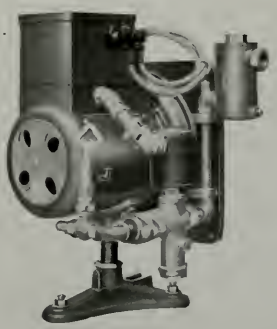

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the Mariposa Battalion, in early days, chased a band of marauding Indians who had hiding places in unknown canyons in the higher mountains. While on the heels of a fleeing band of redskins, Major Savage and his men reached the rim of the "Valley of Valleys." Ahead was such a gorgeous view that they reined in their horses, forgetting the objects of their chase, and gazed with startled wonder. They had discovered Yosemite.

Madera soils are those of the rich San Joaquin Valley and the county's agricultural products cover a wide range. Population: 17,164; Area: 2112 square miles.

MARIN COUNTY—Created February 18, 1950. One of the original twenty-seven counties of the state, it derived its name from Chief Marin, of the Licatiut tribe of Indians. In 1815, a military expedition of the Spanish proceeded to explore the country north of the bay of San Francisco. This action aroused the ire of the Licatiut tribe and a desperate engagement was fought in the valley now known as Petaluma Valley. Chief Marin led the forces of the Indians with wonderful strategy and bravery. At the same time, his subchief Quentin gave battle to a second division of the Spanish army at the point which still bears his name, Punta de la Quentin. In 1824 the chief was captured, but escaped, locating on a small island in San Francisco bay. Later he again was captured and sentenced to death. Priests of San Rafael Mission saved him and converted him to their faith. He died in the mission in 1834.

This county, known as "Marvelous Marin," is a lovely portion of the Redwood Empire and one of the most picturesque counties in California. With its woods and hills, gardens and trees, surrounded on three sides by the Pacific ocean and San Francisco and San Pablo bays, Marin is a land of beautiful homes. Almost in its center stands Mount Tamalpais at the base of which are the world-famous Muir Woods, named in honor of John Muir, the naturalist. In this great grove of redwoods are trees ranging in age from 500 to 3000 years. The tribe naming Mount Tamalpais is a matter of controversy. Some insist it was the Lacatuits, while the Smithsonian Institute has given its choice to the name "Hookoekos." Some believe the name came from the Nicasio tribe, but whatever the tribal name, it generally is conceded that the Indians called their land "Tamal"—the word from which is derived Mount Tamalpais and Tomales Bay.

In 1579, Sir Francis Drake entered the harbor now known as Drake's Bay, visible from Tamalpais, where he made repairs to his Ye Golden Hinde and obtained provisions.

Marin is one of the counties leading in the production of farm and dairy products. General farming and cultivation of orchards are carried on although the agricultural area is limited. Population: 41,648; Area: 529 square miles.

Next: Mariposa, Mendocino and Merced—Editor.

(Continued from Page 67)

More care should be exercised by the architect in estimating the cost of his job, Mr. Nibecker stated, and a special effort made to keep the cost within the estimate, thereby simplifying matters for all concerned.

Donald Cunliff, construction superintendent of the Los Angeles Board of Education, advised architects to watch costs, avoid change orders and sign their PWA documents. Construction costs are 10 to 15 per cent higher than they were six months ago, he said, and may go higher.

Specification work was discussed by A. C. Zimmerman, until recently employed by the school board. Many specifications turned in by architects could have been greatly improved, he said, principally because they did not follow requirements and were not properly edited.

Myron Hunt, chairman of the Chapter's county courthouse committee, gave an interesting account of the work his committee has done in endeavoring to arrive at a satisfactory solution of the location of the proposed Los Angeles county courthouse.

This committee, composed of Mr. Hunt, Reginald D. Johnson and Donald B. Parkinson, together with three civic leaders and three county department heads, have been instructed by the supervisors to figure out a way of building a suitable building on property now owned by the county.

It is the opinion of these men that an office-type building with high ceilings, a portion of it adapted to courtroom purposes, erected on county-owned property north of the Hall of Justice, between Broadway and Spring Street, would be the economical plan for the present. The cost at this time, as reported to the committee by authorities, of privately-held property on the west side of Broadway, between First and Temple Streets, precludes the use of that site.

Should the next generation decide to acquire this or some other courthouse site the recommendation is that the present courthouse be so designed, engineered and constructed as to make it convertible into a county office building.

In the meantime the recommendation is that the courts be so amply provided for that if the next generation decides to continue to use this building, enlarged, as a permanent courthouse, it will be adequate and dignified.

Standing committees were named as follows: Ethics and Practice—H. C. Chambers, chairman, Roland E. Coate, Edgar Maybury, Carleton M. Winslow and A. C. Zimmerman. Education — Sumner Spaulding, chairman, Wm. H. Schuchardt,, C. Raimond Johnson, H. C. Nickerson and Paul Robinson Hunter. Membership—W. L. Risley, chairman, Herbert J. Powell, Ben H. O'Connor, H. G. Spielman and Wm. S. Mackay. Affiliated Societies — Edgar Bissantz, chairman. Finance—Samuel E. Lunden, chairman.

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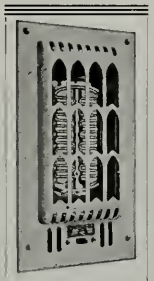
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CITIES WILL CHANGE

Transformation of the nation's cities will be the major task of architecture for the next generation, Louis La Beaume, vice president of the American Institute of Architects, declares in an optimistic forecast of progress in the construction and allied industries for 1936.

Not only architects but manufacturers of building materials, quarries, mills and mines, labor and transportation will share in a sustained upswing after five or six years of distress, due to the curtailment of investment building on a large scale, Mr. La Beaume predicts.

This revival, avoiding the speculative excesses of the 1920's and shaped by sound principle of city planning, will, he foresees, embrace vast modernization and rehabilitation operations as well as the erection of new homes and Federal, state, municipal, commercial, and institutional structures.

"Our cities have grown like weeds, and we cannot begin remaking them too soon," he says. "They are symtoms of anarchy, and of a disregard for the decencies and amenities of life. They must be remade in the interest of sound economics, hygiene, traffic simplification, convenience and beauty. This metamorphorsis will constitute the principle field of architectural endeavor for years to come.

"Many signs indicate the dawn of a new era for the architectural profession. As general business recovery proceeds, the demand for new structures will grow. In the domestic field we may confidently expect increased and healthy activity for these reasons:

"First, homes do deteriorate, and repairs too long deferred contribute to further deterioration. The time is at hand when conditions are ripe for a vast volume of modernization and rehabilitation if the nation's investment in existing structures is to be salvaged.

"Second, due both to the normal expansion of population and to better business conditions, a great number of new dwellings are needed. Especially is this true in the field of moder-

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ately priced homes. That the movement to supply this need is well under way no one can doubt.

"This movement offers both a challenge and an opportunity to the architectural profession. The demand for individual, well-planned, well-designed, and well-constructed homes at moderate cost is becoming more insistent day by day. Also the demand for the modernization and improvement of existing structures calls for skill, ingenuity, and common sense on the part of the architect.

"Federal Public Works involving architectural elements such as post offices, court houses, custom houses, and departmental structures have always constituted a source of inspiration and interest to the architectural profession, but the volume of such building has always been small in comparison with the nation's normal building budget.

"Today states and municipalities, as well as the national government, are undertaking programs of considerable importance in this field. We may also expect some activity in other public building, such as state and municipal eleemosynary institutions. The building of schools is being encouraged by grants from the PWA, and the profession of architecture is benefitting by the stimulation of this activity.

"We have heard much talk of low cost housing on a large scale, and some noteworthy projects have been undertaken under the sponsorship of the Federal Government. However, the Government's program in this field has encountered many obstacles which have retarded its development. Some of these obstacles have been legal, some economic, but as the social necessity for slum clearance and better housing for our working people becomes more generally understood, it cannot be doubted that ways and means will be found to eradicate the blighted areas in great cities. In this field the services of the architectural profession are of paramount importance.

"All of these activities, whether they involve the rehabilitation of existing buildings, the construction of small homes, large scale housing

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operations, commercial or institutional buildings, should be solved in the light of modern and common sense city planning.'

The past five or six years of comparative inaction have been not altogether fruitless, according to Mr. La Beaume. "Architects," he continues, "have had ample opportunity to analyze the factors which brought about the stoppage of building on a large scale after the debacle of 1929. For ten years or more previous to the crash, we had witnessed an orgy of speculative building, perhaps unparalleled in history.

"The field of the speculative builder, previously restricted to the erection of jerry-built houses in urban and suburban subdivisions, had been enormously enlarged. Every city in the country succumbed to the speculative craze. Office buildings, hotels, and apartment houses multiplied as if by magic, to supply the needs of a supposedly inexhaustible stream of tenants.

"Land values and building costs rose with the height of the scaffolding, but almost as soon as the scaffolding was removed these values suffered a precipitous decline. The past five years have been years of liquidation, deflation, and readjustment. Losses have been largely written off and tenants are returning to make use of the facilities provided for them in such prodigal measure."

FIRST FOREIGN EXHIBITOR

THE Commonwealth of the Philippines has accepted San Francisco's invitation to participate in the 1938-9 World's Fair.

In a letter to Mayor Angelo J. Rossi and Leland W. Cutler, president of the San Francisco Bay Exposition, Inc., Jorge B. Vargas, secretary to President Manuel Quezon, announced that the Commonwealth Secretary of Agriculture and Commerce has been instructed by the President to begin immediate studies looking toward Philippine participation.

The Philippine government thus becomes the first foreign Nation to signify its intention of taking part in the San Francisco World's Fair.

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AN APPEAL for beauty in architecture is made by the Committee on Education of the American Institute of Architects, of which Dean William Emerson of the School of Architecture of Massachusetts Institute of Technology is chairman.

"In view of the prevalent preoccupation with function rather than design, and the tendency to regard composition as little more than the assembling of pre-fabricated units, the committee believes that the time has come to make an appeal for beauty in our architecture—for the expression of something more in the exterior of a building than the mere portrayal in diagrammatic form of the structure as shown in plan.

"With full recognition of the research and reasoning so logically expressed in plan and structure, we believe that something more is needed; something beyond the purely utilitarian, that might be called either charm or beauty, but without which our creations fail to realize their full possibilities. Our appeal is that this is worth striving for, and that it is more likely to be embodied in our architecture when we recognize our debt to the past and the value of its lessons in meeting the problem of today."

Ellis F. Lawrence, of Portland, Oregon, is a member of this committee.

HOT SPRINGS

Twenty years ago an oil prospector working in the White Sands region of Otero County, New Mexico, was astonished when he tapped a subterranean cauldron of hot water at a depth of 988 feet.

The water reached 94 degrees F., and flowed 1000 gallons a minute.

While this freak of nature brought no joy to the luckless prospector, it is certain to bring pleasure to thousands of vacationists in the near future.

Development of a recreational park and wild game refuge in what is now the White Sands National Monument extension recreational

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project, today is being carried on by the National Park Service.

The hot water, gushing upward through an eight-inch casing, has formed a lake of 200 acres. Wild fowl have claimed the lake as their own. Thousands of sightseers visit the place annually, many coming from Lincoln National Forest 20 miles east.

The vast expanse of pure white gypsum, called the "Alabaster Sand Dunes," for which the National Monument was created, is said to be the only phenomenon of its kind in the world. Plans call for pipe-lines from the hot water gusher to the National Monument recreational center.

The Park Service will maintain and administer the area—one of 46 similar developments in progress throughout the United States.

DOUGLAS FIR HANDBOOK

The "Douglas Fir Use Book," a new and enlarged handbook for architects and engineers, giving load tables for Douglas fir lumber, formulas for various kinds of loading, and other structural and design data, has been issued recently by the West Coast Lumbermen's Association, 364 Stuart Building, Seattle, Washington. The book has been designed to supply all the data about Douglas fir that a designer would need in using this lumber for grades and notes on their use; propany construction purpose. It includes information on: basic laws for stress erties and factors related to longitudinal shear, compression and tension stresses, deflection, effect of duration of time of load, and factors of safety; an exposition of timber connectors—split rings, toothed rings and shear plates; grade marking; a grade-use guide that describes grades and makes grade-use recommendations; formulas for various kinds of loading—bending, shear, deflection and deflection loads; properties related to weight, areas, section moduli, moment of inertia, and moments of resistance; inch-width loads; span load tables for joists and beams; maximum spans for joists and beams; loads for plank and laminated floors and roofs; loads for posts and struts, and loads for studding.

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OREGON STATE CHAPTER

Fred Aandahl, member of Sutton, Whitney and Aandahl, Lewis Building, Portland, was elected president of the Oregon Chapter, A.I.A., for the 1936 term at the annual meeting, January 28, at the Congress Hotel, Portland. Other officers chosen were: Vice-president, Roi Morin; secretary, John T. Schneider; treasurer, Harold D. Marsh; trustee, Hollis Johnston. All reside in Portland.

Oregon architects were urged by Carl F. Gould, Seattle architect and technical advisor to the capitol commission, to lend support to the Oregon State Capitol Reconstruction Commission in its efforts to provide an adequate and thoroughly modern new state capitol building.

Following the serious business, the architects and their guests were entertained by a hi-jinks program under the direction of the inimitable Harold W. Doty, toastmaster.

WASHINGTON STATE CHAPTER

Lance E. Gowen, Seattle architect and faculty member of the University of Washington, has been elected president of the Washington State Chapter, A.I.A.. Other officers are: First vice-president, Floyd A. Naramore, Seattle, second vice-president, Nelson J. Morrison, Mock and Morrison, Tacoma; third vice-president, Harold C. Whitehouse, Whitehouse and Price, Spokane; secretary, William J. Bain, Seattle; treasurer, Albert M. Allen, Seattle.

Following the election of officers Judge Roger J. Meakim, King County Superior Court, delivered an address. The program, arranged by Donald Thomas, entertainment committee chairman, included specialties by the Sallie Sue White Dancers, accompanied by Bernice Campbell.

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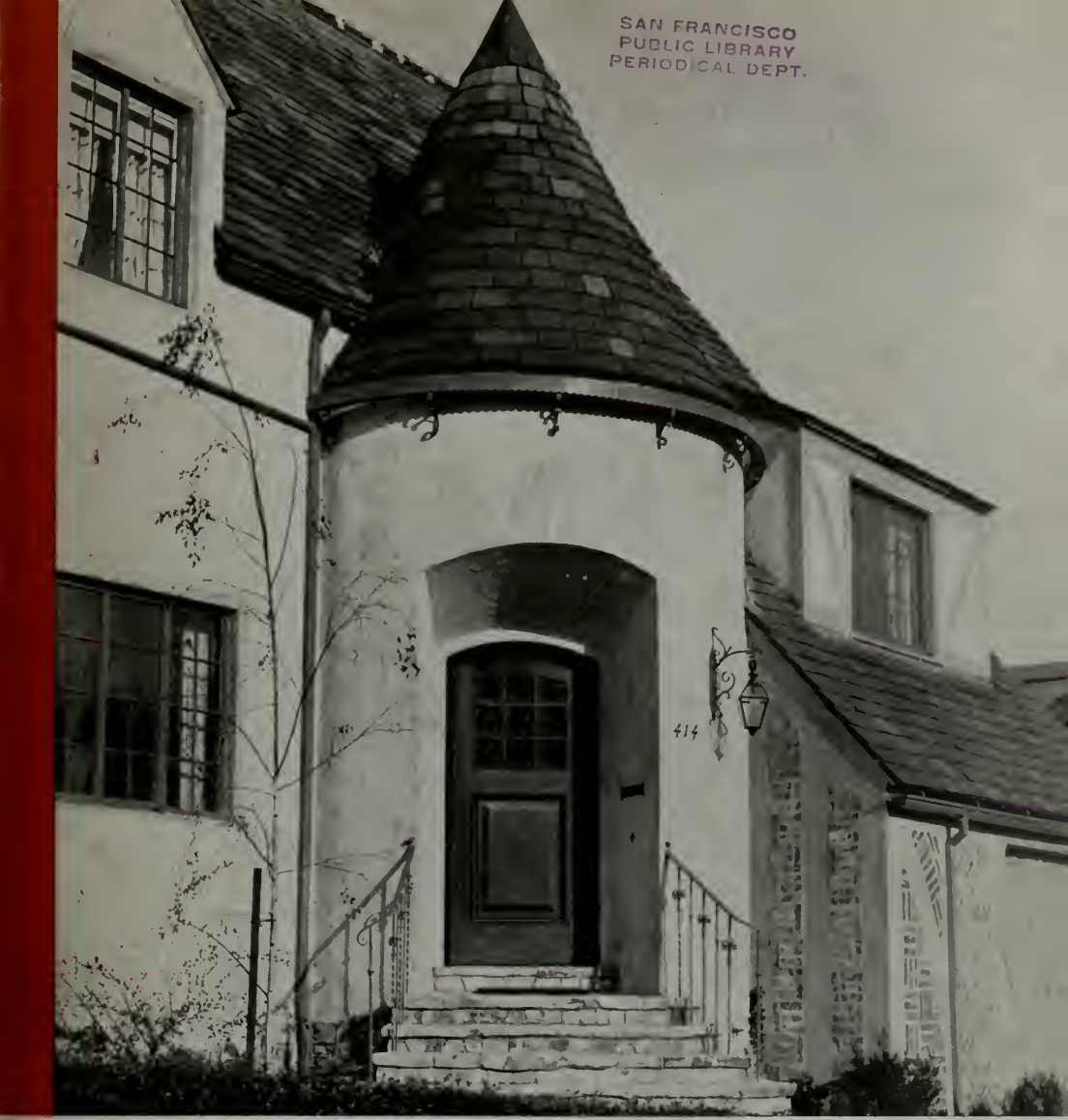

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NOTES AND COMMENTS

TEXAS ARCHITECT SCORES MODERN STYLE

WHAT one architect thinks of the modern trend in architecture is reflected in the following letter penned by L. S. Sanderson, architect, of Laredo, Texas, soon after he had read the December Modern number of THE ARCHITECT AND ENGINEER. The Texan cannot see any logic or good common sense in substituting the so called moderne for a style that his countrymen have learned to love and which suits their needs and climatic conditions.

To ease his anxiety and assure him there is nothing to worry about we would like to have him read Reginald Johnson's article in the February ARCHITECT AND ENGINEER on "Architectural Expression". Let us quote a paragraph which seems particularly applicable to Mr. Sanderson's perturbation:

"'Modern design' must of necessity be influenced by environment and tradition. For example, there are many delightful towns in New England and in the South, and a few in the Southwestern section, where precedent in the past has been so well established that we are more than justified in carrying forward our newer buildings in at least the spirit of what has gone before, no matter what the Modernist may say to the contrary."

So if Mr. Sanderson wishes to design homes possessed of the Spanish or Mexican or Mission feeling he may very properly do so and still be "within the law".

Let us go on with Mr. Sanderson's interesting letter:

"Your December, 1935 issue on MODERN ARCHITECTURE has left me in a quandary. I read it with an open mind. My mind is still open and empty. Nothing entered it upon my reading. I seek information. Was my failure to understand due to my inability or because there was nothing to understand? . . .

"I am giving my clients the best architectural treatment a man could give. At least I give them the best according to my lights. After I make the plans I get out here in these hills and help break up the rock, staying right with it until we get the last piece of cow-hide stretched over the last chair. (You see I design furniture as the new architect must; to this extent at least, I am modern).

"In the States this would be unethical. But I am not in the States. This is the ancient kingdom of Laredo with descendants of the same families on the throne that came here from the Canary Islands via Vera Cruz 150 years ago to settle this frontier for the King of Spain. Spanish is the only language in which a brick has ever been laid. We are different in other ways too. For one thing, there is not a 'for sale' or 'for trade' sign in the whole kingdom.

"My work shows up over that of my Spanish wife's great grandfather because my buildings represent a college education. They have dynamic symmetry, hot and cold water with built-in douche basins. All very modern to be so harmonious at the same time with the old buildings. Or that is I thought they were modern until December when I received this special modern issue. Now I don't know. Maybe I cannot see well any more or have gone loco trying to make the Indians understand the same things the first Spanish settlers tried to get them to understand.

* * *

"For years I have thought that my work built in the Spanish manner, with thick walls of stone and heavy carved beams, was mighty fine, especially those having glazed tiles and carved furniture from Spain and Mexico. But now I don't know. It looks like it is all over for me. Why only last week I told a banker if he built his new bank in the good old tried and century-tested Spanish manner, with all these new things listed in the books of 'Sweet for Banks' he just couldn't go wrong. For the Spanish style, like the Spanish language, would be the only one our people here would ever understand. It has to our minds a timeless, classic quality. Are we wrong?

"They all believe me for, by hard, honest work, I have built up a reputation for doing things that will never go out of style as long as women sing songs and men drink wine and both make love.

"But now I guess I am ruined and will be beheaded or exiled. It is awful. I would rather die than be driven away from the palm trees, the oranges, the cattle, the vineyards, the cactus and all that these things represent. Yet exiled I must be if your December number is right. What will become of my wife, my daughter Margarita, and my dear old mother who worked so hard that I could go to Spain and learn how to build for gentlemen whose pleasure it is to live in hot countries. . . .

"Oh, Mr. Jones, you who have been a Californian for so many years, you who know the history of California so well, you who have helped paint the picture of California as a land of an all-consuming romance, how could you ever permit this terrible thing to come down on the heads of so many of your friends?

* * *

"Of all the architectural magazines I receive, yours is the only one my good friends like to see. California the romantic —California the beautiful! What will become of the Golden State? What is to become of the artists, the carvers, the sculptors, the poets?

"Will they redesign the Missions, Ramona's marriage place and Santa Barbara? Will there be a revolution? I hope so. I hope they give the punishment of the horses to these imos that are trying to change the sound of children's dancing feet to the buzz of a machine.

"What has changed the functions of eating, sleeping, loving, fighting, drinking, smoking or dying to require new forms for their exercise? What is a new form? Have Wright, Corbusier, Neutra or Weatherhead, individually or collectively, ever produced a single damn thing that tops or equals the work of Reginald Johnson, Gordon Kaufmann or John Austin? If they have I say peccavi——. I did not know it. I will pull them over the face of the United States in an ox cart, so they can lash my shanks with a cow hide whip every step of the way for my impudence and show themselves off to the students of America as the greatest artists that ever lived. But they will never earn that ride and the world knows why.

"I am out of my mind or you are. But it must be me. It's hot here. Time is of no consequence. Maybe I am Cortez awakened from a dream or the soul of Montaguna crying out to his branded braves not to give up. Anything may be possible when you are cracked or slipping. . . .

"They may see in me a potential worker in space. God knows I have more space to work with than any other architect on the North American continent. It is 150 miles to the nearest architect's office. So if space, instead of geography, is going to be the big thing for architecture in the future I am the Kingfish right now and will share the wealth with anybody that will get behind me in this new superheated, high speed, easy riding, streamlined, architectural vitamin.

* * *

"So here is what I want to know Mr. Jones, or Mr. Corbusier, or Mr. Wright, or Mr. Neutra, or Mr. and Mrs. S. Schindler, or Mr. Weatherhead and the seniors of the Class of '36, et al, or all of you—tell me, please, if you were in a hot cattle country, sans factories, sans discontent, where good building rock that is to be found everywhere, breaks up in such a way that it is cheaper to build a wall two feet thick than it is one foot thick or 6" thick, would you send away for material of vegetable or synthetic composition in order to be able to poo-poo the ancient order of interior decorating and time period temperaments? Would you?

"If every ranch, and that is the trade of this kingdom, not psychology, has more than enough mesquite trees on it to pro-

(Please turn to Page 80)

ENEAN THEATER, PITTSBURG, CALIFORNIA
F. FREDERIC AMANDES, ARCHITECT

THE
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GARDEN VIEW, RESIDENCE OF MRS. A. BROWN, ATHERTON
F. Frederic Amandes, Architect

TWO THEATERS AND SOME RECENT HOUSES BY F. FREDERIC AMANDES

ARCHITECTURE is finally emerging from a period of unrest and despite the teachings of a few modern extremists, the traditionalists are moving ahead. To attempt to overthrow precedents that have weathered the test of centuries is folly, many architects opined when the movement was young, and now they are boastfully crying: "We told you so." The modernists are retreating and extreme is giving way to conservatism and common sense.

This does not mean that modern design is passe. On the contrary, the movement has accomplished some good. For one thing it has brought the architect to a point where he realizes the necessity of a fresher and less traditional approach to his problems. So if the functionalists have overstepped they have at least performed a useful service in calling attention to the need of simplification and for a clean, outright architectural treatment.

Certain types of buildings are being successfully handled along modern lines with the chances favorable for a continuation of this

Mural by A. Heinsbergen

TWO VIEWS OF FOYER, ENEAN THEATER, PITTSBURG, CALIFORNIA
F. FREDERIC AMANDES, ARCHITECT

AUDITORIUM, ENEAN THEATER, PITTSBURG, CALIFORNIA
F. FREDERIC AMANDES ARCHITECT

practice for some time. The motion picture house, for example, offers an opportunity for the use of materials not heretofore assembled. We find sheet metal and glass replacing heavy gold ornamentation while concealed lights have been substituted for the once popular crystal chandeliers. Theater owners have discovered that besides good entertainment they must offer their patrons interiors both unique and colorful, together with comfortable seats, good pure air and smoking conveniences for both men and women.

Such is the type of theaters designed by F. Frederic Amandes of San Francisco and exemplified in the new Pittsburg Theater and the remodeled Fox-California in Richmond.

PITTSBURG THEATER—In spite of a shallow lot and building code restrictions, a spacious lobby has been provided and throughout the entire building there is a noticeable absence of cubical waste space. By using an inverted truss overhang for the balcony, it was possible to increase the height of the lobby ceiling, thereby giving the foyer a more imposing appearance. A unique feature of the lighting equipment is the center ceiling fixture in the auditorium which is in the form of a sun-burst and designed so that it may be illuminated in colors to blend with the action of the picture. For example, if there is a moon scene, the lights are dimmed to a soft silver glow. If the scene is a storm the lights change from green to amber. The fixture is made of sheet metal and glass. Aside from this ceiling light there is no other fixture visible in the house, so cleverly have they been made a part of the architecture of the interior. The color tones of the auditorium are henna, buff, cream, gold and silver.

FOX THEATER, RICHMOND, BEFORE ALTERATIONS
F. Frederic Amandes, Architect

FOX THEATER, RICHMOND, CALIFORNIA, AFTER ALTERATIONS
F. Frederic Amandes, Architect

RICHMOND THEATER—One need only to look at the two exterior pictures, the old and the new, of the Fox-California Theater in Richmond, to appreciate the improvements that have been made in the appearance of this building. The feeling is decidedly modern. In providing additional seating accommodations the architect, Mr. Amandes, and the structural engineer, W. Adrian, adopted a plan of economy that has worked out with even greater success than anticipated. The

PROSCENIUM ARCH, FOX THEATER, RICHMOND, CALIFORNIA
F. FREDERIC AMANDES, ARCHITECT

AUDITORIUM, REMODELED FOX THEATER, RICHMOND, CALIFORNIA

F. FREDERIC AMANDES, ARCHITECT

RESIDENCE OF DR. AND MRS. HAMILTON H. ANDERSON SAN FRANCISCO
F. Frederic Amandes, Architect

problem was to reduce the steepness of the balcony, dispense with the protruding steel girders, and at the same time preserve sight lines. This has been accomplished by anchoring the steel joists to the main plate girder in such a way that they form one continuous joist.

* * *

Mr. Amandes does not advocate extreme modern design for domestic architecture. He does not consider this style adaptable to the needs and comforts of the average American family. He prefers to stay with the old schools in house design. Simplicity, neatness, convenience, comfort, these are all essential details for a livable American home. If his client has no preference for style, Mr. Amandes is partial to the French Provincial. His own studio home, which is illustrated here, is an example of his ideas in residence architecture.

Mr. Amandes' rise to prominence as an architect has been rapid. In less than ten years he has moved along from a draftsman and art student to association with leading members of the profession, and today he maintains his own office. A native of London, he comes from Swiss-French parentage. During his student career, Mr. Amandes was awarded two Beaux Arts medals for creditable architectural designs. When not engaged in the practice of his profession he finds enjoyment and relaxation as an operatic baritone and builder of water craft.—F. W. J.

RESIDENCE OF DR. AND MRS. HAMILTON H. ANDERSON, SAN FRANCISCO

F. FREDERIC AMANDES, ARCHITECT

LIVING ROOM, RESIDENCE OF DR. AND MRS. H. H. ANDERSON, SAN FRANCISCO
F. Frederic Amandes, Architect

DINING ROOM,

Residence of

Dr. and Mrs. Hamilton

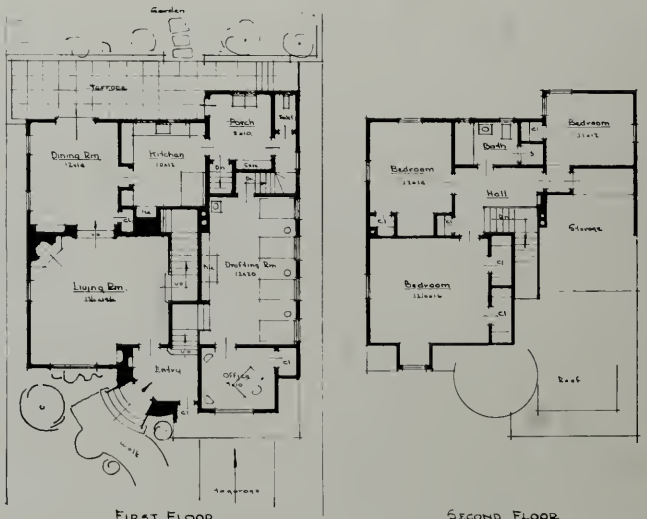
H. Anderson,

San Francisco

F. Frederic Amandes,

Architect

STUDIO-RESIDENCE OF F. FREDERIC AMANDES, SAN FRANCISCO



FIRST FLOOR

SECOND FLOOR

PLANS, STUDIO-RESIDENCE OF F. FREDERIC AMANDES, SAN FRANCISCO

LIVING ROOM, STUDIO-RESIDENCE OF F. FREDERIC AMANDES, SAN FRANCISCO
F. Frederic Amandes, Architect

FACADE, RESIDENCE OF MRS. A. BROWN ATHERTON, CALIFORNIA
F. Frederic Amandes, Architect

RESIDENCE OF MISS MYRTLE A. JOHNSON, WOODSIDE, CALIFORNIA
F. Frederic Amandes, Architect

RESIDENCE OF MISS MYRTLE A. JOHNSON, WOODSIDE, CALIFORNIA
F. Frederic Amandes, Architect

ENTRANCE TO FRENCH CHATEAU, CALIFORNIA SPRING GARDEN SHOW, OAKLAND, CALIFORNIA

California Spring Garden Show

WHILE rare and beautiful flowers and plants are being "forced" into early maturity for exhibition in the California Spring Garden show in Oakland next month, experienced craftsmen in architecture, landscaping and interior decorating are concentrating on the details of the show requiring their expert attention. The landscape director of the affair, Butler S. Sturtevant, has asked the foremost craftsmen in these fields to cooperate and they are enthusiastic. The theme of the show will be the "Chateau Gardens of France," embodying the creation of three small home-units representing Modern French, French Provincial and Louis XIV types of architecture, and each one complete with its individual type of landscaping and interior decoration.

Patrons attending the show in the Oakland Exposition Building will enter immediately into a French market place, surrounded by a ten foot wall with imposing tower. In a projection

BUTLER S. STURTEVANT
Landscape Director California Spring Garden Show, Oakland

of the side wall will be a typical French Catholic Shrine, with market baskets placed at the foot of the wall. A sidewalk cafe under brightly colored awnings will be found in this area also. In the center of the market place will be a panel made of colored stone and blossoms, typical of street decorations in Mediterranean countries on fete days. Sponsoring this unusual display is the Business Men's Garden Club of Oakland. Steps leading upward to the top of the wall command a view of the Chateau gardens, parterre, French lattice houses, neatly trimmed lawn panels, garden statuary and fountain and pool in the manner of the one at Versailles.

Priceless orchids of many varieties will be seen through a series of arches in the vicinity of the Versailles pool.

So that patrons may remain for many hours in the Chateau Gardens, members of the board of directors of the show, headed by Abe P. Leach, president, have arranged for many rest benches near the wall terrace and around the fountain. In addition to the big beds of brilliant and large blooms, there will also be a collection of wild-flowers arranged in one of the several lattice houses.

The modern French home unit designed by William W. Wurster will show a French morning room with modern textiles, furniture and color scheme arranged by Armstrong, Carter and Kenyon, interior decorators. Landscaping for this unit will be done by Thomas D. Church of San Francisco.

The French Provincial home-unit has been designed by Henry H. Gutterson of San Francisco, who last year designed the beautiful Georgian manor house which formed the entrance to the garden show. Helen Van Pelt, landscape artist and Arthur Baken, interior decorator, both of San Francisco, are collaborating with Mr. Gutterson.

The Louis XIV home unit is the work of Clarence A. Tantau of San Francisco. Leslie Kiler of Palo Alto will do the landscaping and Winifred Wise of Oakland, the interior decoration.

In addition there will be a garden unit designed by a student at the University of California in the Division of Landscape Architecture, and whose plan was chosen in competition with other students in this department.

Frank L. Foley, General Contractor

NEW HOME OF POMONA TILE MANUFACTURING COMPANY, LOS ANGELES
Monte D. Healey and Arthur W. Hawes Architects

TOWER OF INTERNATIONAL HOUSE, UNIVERSITY OF CALIFORNIA, BERKELEY, CALIFORNIA

GEO. W. KELHAM, ARCHITECT

FURNITURE AND TH

A THEORY OF INTERIOR DESI

THE architect of the past conceived the house as a group of separate rooms, carved out of his structural mass, like the holes in a piece of cheese. Each room was complete in itself with only a slight relation to the next one. It was possible to decorate each room in a different "style", and finally, in our times, to add an American bathroom without any shock to the sensibilities of the occupant.

The Space Architect sees the house (or the whole town an articulation of the one cosmic space. The house becomes an organism in which all rooms are related to each other, representing variations of one basic theme. The house becomes a weave of a few basic materials used to define his space forms. The furniture which is stationary (beds, etc.), becomes part of this weave, until it is impossible to tell where the house ends and the furniture begins. The few places which are necessarily movable (chairs, etc.), become so in an accentuated degree. Moving, they are unfit to define the space conception and must therefore be eliminated architecturally for the sake of clarity. They are either folded up and stored away or made transparent to become inconspicuous. This is the real meaning of the metal chair. Its essence is its transparency—the lack of which immediately delegates to the realm of idle phantasies all the "fashionable" designs in which bulging upholstery masses are suspended on snaky metal braces.

The folding chair is the more radical solution of the space architect's problem — it avoids blurring of the space scheme by leaving the realm of furniture altogether; it becomes part of the occupant like his shoes and clothes and will develop his final shape out of this new constellation.

EDITOR'S NOTE—This article is a continuation of a paper, the first installment of which was published in the ARCHITECT AND ENGINEER for December, 1935.

COMPOSITION AND SCALE

The social structure of the past was based on a pyramidal conception of the universe. The world was seen as built up from a wide common level to the authoratative position of king and God. And all the detail groups of the social building—family, monastery, etc.—

MODERN HOUSE

BY R. M. SCHINDLER

were again built on the same form scheme. This pyramidal conception of the world seems to have blinded the feudal artist to the beauty of any other scheme of composition. Houses, furniture, including their details throughout, fit themselves into the outlines of an upright triangle—each piece in shape and meaning an altar to the idea of centralized authority.

The stereotyped form-sentence of the conventional designer: base, body, cornice, crown, —has now lost its meaning. The contemporary form-sentence may move horizontally, around the corner, or even downwards.

The social position of each member of the pyramid of feudal society had to be expressed outwardly. Representation became one of the important functions of any individual. Life lost its fluidity, and separated itself into alternating periods—front stage for representative action and backstage for private life. The house expressed and furthered this scheme. The front-elevation with the main entrance, and the other sides with the backdoor, belonged to two different worlds.

Our time, with a more democratic scheme, has discovered the meaning of the neighbor and allows us to stretch our hands out horizontally. It has accorded to any individual the privilege of the king to consider himself and his action sacred at all times. Our houses lose their forbidding faces and become three-dimensional beings in a three-dimensional world.

One of the most primitive tricks for impressive representation was accentuation by size. The king with cloak and crown became a giant and his palace reflected his grandeur. It was natural that social prestige attached itself to dimension and the architect of the last centuries used a scale which was social rather than human.

Only lately have we again discovered the real height and breadth of a human being. Ceilings shelter us instead of crowning our position. Doors are to walk through rather than to form an impressive frame for one who carefully pauses on the threshold. The chair supports the back rather than to produce an aura for our head.

POSTURE

The postures we assume in our unconscious daily life are rigidly predefined in our culture.

This means that they not only express this culture, but that through them the imagination of the architect may profoundly influence our spirit. Our furniture in compelling certain positions is directly molding physical traits, manners and culture.

The high straight-backed mediaeval chair reproduces an epoch, and requires a position impossible for us. Grandmother's wing-chair of a more recent period, around which her grandchildren gathered and in which she ailed and died sitting, represents a different world, contrasting with our low clubchair and our supine position for rest and death. It seems that our nervous intensity in action requires in turn a more relaxed rest position. Even sitting at our work we are apt to seek the horizontal by putting our feet on the desk.

This tendency, together with our changing attitude toward the floor, lowers and spreads our furniture. The stationary furniture, especially, stops leaning against the wall and tries to merge with the floor. The imaginary horizon in the room has dropped from door to elbow height. This divides the room at a lower level and increases its spaciousness. The height of the window-sill of yesterday is confiningly high today, the coming window will extend its pane to the floor. Not, as the mechanist claims, because we are able to make larger panes, but on the contrary, it is because our inner urge requires it, that such larger panes are made. The conventional picture above the fireplace is high above our horizon, and if we really want to study a painting we set it on the floor.

The ceiling has completely disappeared above our line of vision and we no longer lavish our decorative talent on its surface. Our intensity of action has increased the necessity for elbow room. The accepted standing and walking position of the conventional ballet (heels together, toes apart) which children were trained to assume fifty years ago, has given way to the more active one of the toes pointinb straight ahead. Our wardrobes recede into the wall. The concentric grouping of furniture gives way to a linear one. The mobile piece must be small and light enough to respond quickly to our intentions. It is impossible to hurry in a Roman toga, or to sit down quickly if it requires a servant to move our chair. A highly polished parquet floor can only be the stage for a circumspect execution of representative postures. Our house should give us ease and freedom of action—a request which "period furnishing" is unable to satisfy.

ORGANIZATION

The preservation of fluidity and continuity of space in the house eliminates all features which are too self-centered. Conventional design invariably breaks up all flow by a repeated use of symetrically arranged and therefore self-centered groups. This holds good for rooms as well as furniture. Therefore, contemporary work will usually shun the circular room, the cupola, a furniture arrangement which faces a center point (cut-a-corner position) and symmetrical pyramidical pieces—even if they masquerade under a modernistique formskin. It ends the work of the conventional decorator whose scattered groupings of odd pieces have lost all artistic meaning.

The space architect organizes the room according to his purpose and still maintains an unobstructed natural motion through the house. This does not interfere with the tendency of most rooms to face a fireplace, a view, or some other feature of special interest. The furniture will be arranged in such a way as to facilitate the contemplation of the center of interest from all points of the room where this can add to the charm of living.

The room will clearly separate areas for the different postures of its users. Open spaces for communication should be well-connected and allow short traffic lanes. Areas for sitting, and low places for horizontal rest will relate themselves in proper sequence to the lanes of communication. They will succeed each other in definite sequence towards the center of interest, so that the standing person will be behind the sitting one and that the latter with table and chair will not obstruct the view from the couch. This means that instead of pointing at the center of interest in the conventional way

by some axis of symetry, it will be featured by the downward slope of the plane which connects the tops of the furniture. This will further emphasize such a center by means of a large open floorspace in the foreground, replacing the conventional emphasis by means of a frame and a suppraport; it will allow the introduction of an accent in the room without stopping the desired flow of the space toward the next one. Together with the natural interlacing of the areas of communication, the house will achieve an organic unity impossible in the "period house" and its present rehash.

FLEXIBILITY

Intimacy of connection between the house and its furniture does not imply that all rooms must forever retain their original design. For the large group of people, especially, who live in apartments and move from place to place, a static room is not practical. It should be possible on the one hand to move the furniture into rooms of different shapes without difficulty, or on the other to rearrange the same room to fit a new accupant. The implied urge towards individualization grows constantly, and contemporary furniture must satisfy it in order to be successful. One solution for this problem is shown in the author's "Schindler Units", composed of a few simple units they allow rearrangement, addition, and subtraction with ease.

The basic idea for such a unit scheme is thoroughly modern and could not have been conceived in a period without machine production. It illustrates at the same time that most of the sloganists advocating machine production do not yet understand its essential features. The machine which is used to fabricate whole objects: houses, desks, etc., takes its production scheme from the craftsman. The latter, however, maintains a certain aliveness in his product by his inability for exact repetition. The machine, for which exact repetition is the very essence, when misused in such a way will cause a deadly standardization of our lives.

Only by confining the machine to making parts (units) which, through the very fact of their precision, may be joined freely, can we subdue its mechanical ferocity to individual human expression. The machine, contrary to common opinion, can develop such individualisation to a degree of which the handicrafter could never have dreamed.

The "Schindler Units" permit the assembling and rearranging of their parts into furniture, which will respond to the particular conditions of any room, according to the individual character of the occupant. They consist of a number of top-units which are assembled first. They form a skeleton which receives shelves and doors for cupboards or drawers of sizes.

The following considerations governed their design, which separates them definitely from the conventional sectional book case etc.

They are square, low and wide. They do not produce furniture forms standing up against the wall. Placed one above the other they establish several horizontal planes throughout the room, giving the furniture the character of floor terraces.

They have no definite front, but may be used turned in all four directions. The resulting furniture has no representative face, but is three-dimensional.

No unit is symmetrical in itself. It therefore permits the establishment of form relationships with its neighbors. The result is consequently not the formless pile of self-centered elements which the usual type of unit furniture produces, but a form organization with definite character and variable individuality.

The scheme further includes large floor pillows, which may be changed into armchairs by simply adding an adjustable back and arms. Several such seats and backs joined together form the couch, which may be of any length, or a corner seat.

Further individualization may be achieved by the addition of a few specially made parts, which may be of sufficient emphasis to alter the character of the whole assembly.

THE FOUR ELEMENTS:

Earth, Water, Fire, Air.

The mainspring of primitive life was fear. "My house is my castle" shows how that emotion adhered to man throughout his development up to the immediate past. The most "comfortable" house was the one which faintly reminded him of the feeling of relief felt by the animal, and by his ancestor, upon entering a secluded cave.

Only the contemporary architect has realized that this period of fear has passed. The elements are no more our masters and enemies: they are our friends and servants, and the out-of-doors is our playground. The house opens wide towards the garden, and if it is to be comfortable, it must be able to furnish us artificially a suitable climate without losing the feeling of openness. Our newly-acquired ability to manufacture our own climate must not separate us from our natural contact with the elements. They serve us admirably in their domesticated form, flowing through pipes ducts, and wires, but life would become unbearable if we were to surround ourselves only with servants. To insist that ventilating windows, light windows, fire places and pools are rendered obsolete by our ducts and pipes, is merely to repeat another half-truth of the modernistic sloganist. The open window, the furtive sunray, the natural breeze, lightning and thunder, the crackling flame, the bed under the stars, are thrilling experiences not to be surrendered from our daily life. Our houses must admit the elements as friends. The functionalist who preaches that the canned life of our top-story city apartments is the ideal of the future, forgets that the revolt against the confining features of such city life is ready to kill the city altogether.

LIGHT

The effort of man to multiply the hours of the day by artificial suns has discovered for him one of the most potent and subtle materials for room building. This is possible only since we have been able to disassociate the light from a concentrated source and understand it as an attribute of space.

The harnessing of electricity has freed our artificial light from the candelabrum and the light fixture. It is able to filter into the room space without emphasizing its source, in a way similar to daylight when it is not confined to a small windowpane. Light and darkness and colored lights are building materials as effective for the defining of rooms as are steel and concrete.

This use of light in contemporary work is completely contradicted by any emphasis of the source: the "light fixture." No effort of any fashionable designers can create a "light fixture" — the favorite stamping ground of half-baked imaginations—which is in truth contemporary or modern.

The space architect uses the illumination of the room to shape it richly without necessity for cumbersome material divisions. He uses it to connect rooms in spite of a partition between them for practical reasons. The light of the room matched in the garden will join the two and effectively suppress a glass wall between them.

And his power will be complete when the present primitive glass wall develops into the translucent light screen. The character and color of the light issuing from it will permeate space, give it body and make it as palpably plastic as is the clay of the sculptor. Only after the space architect has mastered the translucent house will his work achieve its ripe form.

A MODERN BEACH HOUSE BY GORDON B. KAUFMANN

BEACH HOUSES in the modern design are becoming increasingly popular. In December **The Architect and Engineer** published pictures and plans of an interesting beach house in Richmond by W. W. Wurster. In this issue is shown an eight-room moderne beach dwelling, with strong nautical treatment, at Alamitos Bay, Gordon B. Kaufmann, architect. Mr. and Mrs. Norman Chandler are the owners of the house which is constructed of wood frame with exterior of flush redwood boards and horizontal flush redwood mouldings for architectural effect.

The exterior walls are finished with a patent hardboard, etc., laid in symmetrical horizontal panels and finished with semi-gloss enamel. The floors throughout are covered with linoleum. Provisions for heating the residence has been made by installation of gas radiant fire wall heaters. The kitchen is equipped with a modern gas range, and an automatic storage type water heater.

MASTER BED ROOM, BEACH HOUSE FOR NORMAN CHANDLER, Alamitos Bay, California
Gordon B. Kaufmann, Architect

Upper Picture—Redesigned Auditoruim, Polytechnic High School, Long Beach
Center—Commercial Building
Below—Commercial and Science Buildings

Polytechnic High School at Long Beach

ONE of the outstanding school buildings to be designed and erected in California since the state's "lateral force" law became effective, is the Polytechnic High School group at Long Beach, Hugh R. Davis, architect. The new structures, with one exception, replace buildings that were badly damaged in the 1933 earthquake. The single building to survive the disaster is the auditorium which has been redesigned and practically rebuilt to conform to the requirements of the California state lateral force law. The other buildings, all new, form a splendid group, structurally well designed and architecturally pleasing.

When the new plant is entirely completed the Board of Education anticipates an enrollment of 4000 students, greater than that of most universities. In replanning the group to meet the requirements of this large student body, two limitations placed upon the architect, Hugh R. Davis of Long Beach, were the location of the auditorium and a strip of privately owned land on the Fifteenth Street frontage of the site, which extends for two blocks along Atlantic Avenue to Seventeenth Street. It is expected this strip will be later acquired by the city in which event the gymnasium will be moved from its present temporary location to the south line of this property, making a large quadrangle for physical education activities.

For planning, the high school plant was divided into three general departments, Academic, Manual and Physical education. As the last mentioned is compulsory in California, it was necessary to place the academic buildings as near the street as practicable to obtain the necessary open play area, the manual arts building being placed on Seventeenth Street facing the play area.

Redesigned and Rebuilt to Resist Earthquakes

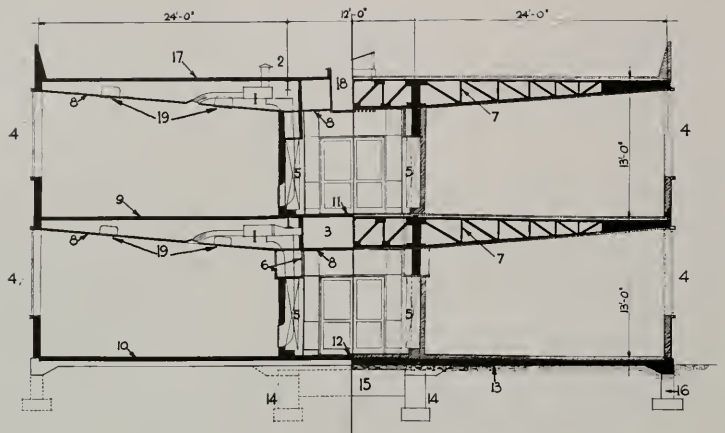
General requirements of the plant originally outlined included 73 classrooms, 7 laboratories, a music hall, 10 shops, 2 gymnasium floors, a swimming pool, a cafeteria and orthopaedic rooms. Provision was made for financing the project on this basis in an application approved by the Public Works Administration, the total estimated cost being 939,495, of which amount $225,738 was to be a Federal grant.

Largest in the group of new buildings are the Commercial and Science Units and the Administration building. The former extend along Atlantic Avenue, with a total frontage of 520 ft. These structures are two stories, the Commercial building being 203 ft. long and the Science building 318 ft., with only a one-inch open joint to interrupt lateral forces separating them. The former is 60 ft. wide and the latter the same width with an ell 36 ft. wide extending out 100 ft. toward the street. The Administration building, also a 2-story structure 250 ft. long and 60 ft. wide, is immediately back of the buildings on Atlantic Avenue, facing on a court.

All the buildings are connected by a covered way, the roof being designed as an outdoor corridor.

The structural design of the buildings to resist lateral force equal to 1/10 gravity was simplified to some extent by elimination of weight and lowering the center of gravity. The latter was accomplished by laying the first floor slab of reinforced concrete directly on the ground and tying it to all the major footings. This plan also eliminates all stairs to the first floor. By the type of construction adopted and the structural design followed it is estimated that the usual dead load of pre-earthquake structures was reduced by 60 per cent.

Upper Picture—Redesigned interior of Auditorium, Polytechnic High School, Long Beach
Center—Shop interior
Below—Class Room in Science Building



1.—Combination heating and ventilating unit. 2.—Fresh air inlets. 3.—Plenum. 4.—"Dalmo" awning type windows. 5.—Lockers. 6.—Continuous steel sash, double. 7.—Welded steel joists, 4 ft. apart, steel deck welded to joists. 8.—Acoustic plaster ceiling. 9.—Maple block flooring on Thermax. 10.—Maple block floor on concrete. 11.—Asphalt tile on Thermax. 12.—Asphalt tile on concrete. 13.—Reinforced concrete diaphragm. 14.—Corridor column piers. 15.—Beam coupling corridor column piers in pairs. 16.—Exterior column piers. 17.—Built-up roof with gravel finish, level. 18.—Skylight. 19.—Built-in lighting units controlled by electric eye.

The structural design of the buildings to safely resist both gravity and earthquake, or lateral loads was influenced by the desire to reduce dead weight of the structure to a minimum, insistence of the architect on practically continuous window areas on outside classroom walls, necessity for continuous transoms and locker space in corridor walls, and the method of heating rooms which required individual heating units between the ceiling and the floor or roof above.

A structural steel frame with rigid column connections and a light weight floor and wall construction were considered the best solution of these problems. Requirements of a two-hour fire-resisting rating for exterior walls of this type of building, imposed by both the state and local codes, was fulfilled by metal studs with one inch of cement plaster on both sides. Such a wall weighs less than 30 lbs. per sq. ft. Code requirements of one-hour fire protection for the structural steel frame were met by wrapping the columns with metal lath and covering them with one inch of cement plaster while the floor, or ceiling and roof construction provided the necessary protection to beams and saved the weight and cost of two-inch concrete fireproofing for these members.

Floor and roof construction consisted of specially designed steel joists, or light trusses, supporting Robertson Keyston beam steel floors with a span of 4 ft. on the second floor and 8 ft. for the roof.

Cost of the reconstruction work, including fees, was $.085 per cu, ft., according to a writer in Southwest Builder and Contractor.

C. Gordon DeSwarte of Los Angeles, is structural engineer for the academic buildings and Laurance J. Waller, of Los Angeles, structural engineer for the auditorium. Homer Fisher of Los Angeles, is the mechanical engineer.

"MANUFACTURED WEATHER"

by
John J. Davey, Architect

TO THE general public "Air Conditioning" is a comparatively recent development and the layman has not as yet been educated to appreciate the exacting requirements of the term. He is generally unaware of its limitations, although he recognizes that it should lead to greater physical comfort.

The innumerable types of equipment now offered indicate that the term is being indiscriminately applied to installations and devices of almost every description. This, together with the contradictory and, in many instances, misleading claims presented in behalf of the manufacturer relative to the performance, initial and maintenance costs of his particular equipment, have created much confusion in the public mind and naturally prompt the oft repeated inquiry "What is Air Conditioning?"

Air conditioning, or as one prominent organization aptly terms it "manufactured weather," is the process by which the temperature, moisture content, movement and cleanliness of the air in enclosed spaces intended for human occupancy, are simultaneously controlled and maintained within definite specified limits at all seasons of the year regardless of weather conditions.

The equipment controls the temperature by summer cooling and winter heating, regulates humidity by addition or elimination of moisture, and creates movement by the even distribution and circulation of both tempered and humidified air. It provides enough ventilation to produce a mild distribution and sufficient fresh or revitalized air to eliminate smoke and objectionable odors.

An installation that does not perform all of these functions is not a complete air conditioning system. The type of equipment and control naturally varies with the specific requirements, character of space, and number of persons accommodated within the enclosed area.

Equipment or apparatus that but partially fulfills the above requirements should, for the protection of both the industry and the public, be so designated as to clearly set forth the specific purpose for which it is intended, viz: Cooling, Humidification, Air Movement or Air Filtration.

Air at any given temperature will absorb only a specific amount of moisture. The cooler the air the less moisture it is capable of holding, and vice versa.

When introduced by infiltration into a heated area, cold outside air with its low moisture content mixes with warmer air of greater humidity and as it becomes heated absorbs all possible moisture from persons or objects which it surrounds, creating a dry condition of relative low humidity. This imparts a feeling of chilliness to the occupants even though the thermometer shows no change in temperature. To overcome this condition, it is necessary to increase the moisture content of the air within the enclosed area.

In warm weather the opposite condition prevails. Warm or humid outside air with its high moisture content, upon becoming mixed with the cooler, dryer inside air, results in a feeling

EDITOR'S NOTE—Mr. Davey's answer to the question: "What is Air Conditioning?" was first published in the Bulletin of the Illinois Society of Architects.

of discomfort to the occupants due to the excess heat and high humidity. To remedy this situation the excess moisture must be removed.

This is usually accomplished by passing the air through a spray chamber or over a surface avaporator. The temperature of the warm or humid outside air coming in contact with the cooling medium is immediately lowered to the required dew point or to where a portion of its moisture content is condensed. The cooled, de-humidified air, when circulated through the conditioned area, absorbs heat and moisture and the process is repeated.

The inside air, plus a certain percentage of fresh outside air, may be recirculated and the excess air is forced out by means of an exhaust fan or by leakage through cracks around doors and windows.

A proper comfort zone, or condition acceptable to at least 50% of the occupants, has been definitely established. In winter a temperature of 68° to 70° F and a relative humidity or moisture content of 20 to 50%; in summer 70° to 85° F and 50% humidity, depending on outside conditions, has proved generally satisfactory.

Experience and extensive research on the part of both engineer and manufacturer have produced many types of conditioning equipment adaptable to almost any need. These range from the large commercial systems to the popular small units and apparatus especially adapted to home use. The latter give practically the same results as do the larger installations and also provide a greater degree of health, comfort and resistance to disease than is possible with the simple heating system.

For new homes a central system is preferable. This consists of a basement unit which houses the fan, filter, humidifier and heating coil. The latter is connected to the hot water or steam boiler and the air conveyed to and from the various rooms by a system of ducts. Primarily intended for "winter conditioning" only, in combination with a refrigerating machine or a supply of sufficiently cold water, it constitutes an "all-year-round" installation.

Another efficient and popular device is the "fan furnace type," consisting of an enclosed coal, gas or oil burning unit from which the conditioned air is distributed. If provided with air filter and humidifier, it becomes a winter system and by the further addition of summer cooling equipment, meets "all season" requirements.

A simple installation, particularly adapted to individual rooms in existing buildings which perform all functions of summer conditioning, viz: cooling, dehumidification and air circulation, consists usually of a cooling coil and fan enclosed in a small portable cabinet which can be placed in any desired location.

The refrigerating medium may also be housed in the cabinet, thus forming a complete self-contained unit, or it can be installed in another location and connected to the cabinet by small refrigerant lines. Where more than one room is to be cooled, several of these cabinets can, under certain conditions, be operated from a single refrigerating machine.

For "year round" service, room cabinets similar in appearance to the simple cooling units, but containing in addition a heating coil, an air filter and humidifier, are available. These, when connected to the radiator system and in combination with a suitable refrigerating unit, meet all conditioning requirements.

The basic principles of air conditioning have been definitely established. However, as with all mechanical installations, the results obtained depend largely upon the ability and experience of the designing engineer.

FUTURE OF THE STEEL HOUSE

by
Edward L. Soule

IT IS rather difficult to attempt to tear an industry, even though it be an infant, into small technical parts and make them understandable in so short a time as that allotted for this discussion. Rather, it becomes a necessity to define the existing requirements for a successful steel home; one that will find favor with the home building public.

It is possible there is a bit of misconception on the part of the general public as to what constitutes a steel home. I find in my contacts with persons more or less interested in the subject, that their first conception seems to be something of a pre-fabricated nature, a house that can be screwed or bolted together in some magical way and present an interior and exterior of smooth, polished chromium, in very modernistic design and for which the cost will be something far below that of any other type of construction.

It is true that what has been done toward the perfecting of steel home construction has been, too often, a method of adaptation of existing patented units regardless of their adaptability to a sane method of steel construction.

It has been several years since steel was first used as a frame for home construction. During these elapsed years many different methods have come on the market. It is only necessary for you to peruse your technical magazines and trade papers to become acquainted with how many organizations are deep in the development of methods and in technical research of various materials in their attempt to solve the problem. And it is only from this concentration of thought and effort that the eventual leaders of the steel home will evolve.

There is, without doubt, a very generous potential market for the steel home. Those of the more advanced type of design are, or should be, flexible enough to definitely fit in with the more modern, as well as the standard architectural treatment of any locality. It should also be adaptable enough so that interior arrangement may be handled without sacri-

EDWARD L. SOULE,
President,
Soule Steel Co.
San Francisco

EDITOR'S NOTE—A paper read by Mr. Soule before representatives of the Iron, Steel and Allied Industries of the State of California, at the Del Monte Hotel, February 7-8, 1936.

fice of comfort or space. There should be no limitation to the exterior or interior finish. Costs, when compared with the old type of construction, should be favorable, when it is considered that the steel home is a product of excellence and longevity; that homes ranging in cost from $5,000 upward, fall into the natural market for steel construction.

Many Types of Steel Houses

There are many types of steel homes on the market at the present time. First, we find that type of construction that adapts already existing units, and with practically no change, utilizes them as framing units for homes. As a rule these units will be found to do only an approximate job. They have limitations, because in the first place they were not made for the purpose of a light weight rigid steel frame for home construction.

Into this category fall those types that have been fabricated by the builders of heavy steel construction. They have applied their basic method of building to the construction of homes, and we find their construction methods to be unwieldy, their frame too heavy and without the flexibility that permits the function of other necessary trades and appurtenances that must be incorporated in a finished building. As a rule the time of erection is too great because the heaviness of the construction material precludes shop unit pre-fabrication.

Any home that can be built of wood can be built of steel, but because of the non-flexibility of the majority of the steel framing systems it will be found that the efforts of the marketers are concentrated on the "box" type of home. In some types the different members are bolted into position; in others the uprights are set in the concrete of the foundation. In most cases the exterior walls are thin, not exceeding four inches in thickness, and the standing members, being of solid steel, afford practically no accessibility for interior wall installations of the plumber and the electrician.

There is a second type that has a tendency to defeat the first principles of steel construction. It is true that a steel frame is used, but that is practically all that is used that will safeguard the home from its natural enemies—fire, dry rot, termites and the endless number of things that cause home deterioration.

These two types of steel frame construction are detrimental to the successful marketing of the steel frame as a method of home building that will render a service far in advance of anything that has been available to the home owner in the past.

For a successful steel home, it is necessary to have in mind the necessities of the eventual owner of the structure. It must be borne in mind that there are many different geographical areas and as many different types of architectural treatment in vogue in the United States. Each of these must be made a part of any plan to market a steel home, if success is going to crown the efforts of the marketer. In each of these areas definite care should be given to the ordinances governing load carrying capacities and stress analysis in all its details.

Should Fabricators Do Actual Designing?

In the past most construction has been predominantly of wood. With the steel home it is expeditious to use wood for decorative purposes only; otherwise the steel is defeated in its first importance. It must be so flexible that it will be easily adaptable to any type of construction and with any materials in vogue within any building area. It must be adaptable to any type of design and so engineered as to give maximum load carrying ability with a minimum of dead weight.

I believe it is going to be necessary for the fabricators of the steel home to do the actual designing of the homes to be marketed. While, as a rule, he is interested only in the frame of the house, he is, at the same time, going to have to produce a home with all the little refinements included, that have become so necesssary to the housewife in her daily home management.

To be able to market a steel home, in which the steel frame is only a small fraction of the total cost, and to gain his livelihood from the

sales of this steel frame, without unduly burdening the balance of the construction with carrying-charges, is going to require a merchandiser of rare ability.

Standardization is another thing that must be considered. Up to and including a certain point there must be standardization, but to exceed this point will defeat any program that adheres to it. Production is of much more importance than Standardization. To temper standardization with flexibility, both in design and construction method, should be the aim of every fabricator of the steel home.

To successfully produce a marketable steel home, it is going to be necessary to have outstanding design. Both floor plan and elevation must be of merit. This constitutes the eye and mind appeal to the home builder. Carrying on from this point, the engineering detail must be so accomplished as to allow for no mistaken theories to enter into the actual fabrication and construction. It is, beyond a doubt, going to be necessary to pre-fabricate in the shop and erect in the field. The methods of doing this must be worked out by each fabricator so there will be little lost time and no lost effort.

'Show Window' for the Steel Home

Erection in the field will be found to be the "show window" for the steel home. It is only at that point that the general public will be able to gain an intimate acquaintance with the various types of construction and the methods used in placing the units. It is more than could be expected, to hope that the public will be able to gain more than a cursory knowledge, or idea, of the merit of any steel home from a hasty inspection of one in the course of erection; but they will be greatly impressed with the skill and the time element in the construction. The compactness and the portability of the various units will be found to have a great bearing on the public mind.

I believe that from a sound engineering standpoint it will be found impractical to exceed three stories in height with this type of construction. I think, however, this will allow the fabricator to include in his marketing operations the sale and fabrication of small industrial buildings, schools, hospitals, and small commercial and apartment buildings. There is, at the present time, in various sections of the country, a very definite trend to the lighter types of construction on some of these.

Of primary importance, after the steel frame has been fabricated and is in place, is the interior and exterior finishes and the method employed in their application. The first prerequisite of a steel home is its fireproofness. Unless this can be maintained over a period of several hours the prime feature of the frame is defeated. It then becomes a great necessity to know that the steel frame is adequately protected from without and within by some method of insulation that will allow it to retain its original shape and carrying capacity through an ordinary period of conflagration. There are many methods available, but it will remain for the individual fabricator to select and market, along with his steel home, the necessary protection to make it all that such a home should be.

A secondary, but almost as important a consideration in some sections of the country, is the ability of the frame to withstand seismic shock. Various theories have been worked out for this, but it is not my intention to go into them today. I only want to remark in passing that a steel frame, to outlive the present day long term mortgage, must be so engineered as to incorporate these two essentials in a greater degree than any other items in the entire construction program.

Should all of the essentials to the construction of a steel home, thus far discussed, be incorporated in the structure, it is only natural that it will be of such soundness that the lesser destructive forces will have no opportunity to attack its parts. It will be rat and vermin proof. Termites and the various wood boring insects will have nothing upon which to feed. Adequately damp-proofed, it will outlast the mortgage period and be a sound and healthy habitation for many years exceeding the period in which it is being paid for.

Desirability of Steel Frame Houses

The ideally constructed steel home, with structurally correct units, has two major outstanding features of desirability. First: The walls between the exterior and the interior finish, and all interior partition walls, should be continuously open for the circulation of air. Second: The size of the openings in each member should be such as to admit all conduits, pipes and conductors, as well as the necessary cross ties to insure structural stability, in this way assisting the installation of electrical, heating and plumbing systems, as well as the newer air conditioning now becoming so popular.

I believe, insofar as the marketing of these steel homes is concerned, that it is going to be necessary for every fabricator to enter a program of education. It is in this effort that the larger steel producers can be of great assistance. For each individual fabricator to try and make an individaul effort to publicize the steel home would lead to a slow and biased program of education conducted through advertising designed to sell ONE particular type of construction. This would be confusing, more than instructive, and would, without doubt, slow up the public acceptance. I suggest that the effort directed to sell the public on the idea—the desirability of a steel home—should be a communal undertaking of those vitally interested.

Let me summarize a bit in conslusion. Throughout the length and breadth of these United States there is a very definite trend toward the building of homes. This trend is being subsidized by the Government, and it is generally expected within the next year that it will grow to such proportions that it will become one of the major operations of the country. To be ready to take advantage of this natural condition the fabricator of steel homes is going to have to perfect an organization of sufficient strength to cope with a flood of interest if he is expectant of receiving a just share of the natural business that will fall within the limitation of excellence of construction and price standard. He is going to have to iron the "bugs" out of his type of construction and make it as universally correct as is possible and still remain within the dictates of sound engineering principles. He is going to have to meet the advanced trend in building design and construction that is now expected of the master builder by the general public. He is going to have to conform to the dictates of the speculative builder so that he in turn may offer something of an advanced nature to the buying public, thereby netting the fabricator increased volume. He is going to have to watch the trends of the increased commercial, school, hospital and small apartment buildings. He is going to have to increase, as rapidly as is demanded by consumption, his production and distribution methods. But first, he is going to have to build a steel home that will do **all** the things claimed for it, and above all, one that will sell.

NATION WIDE BUILDING CENSUS

GIVES EMPLOYMENT TO 3,000 PEOPLE

THE BUILDING INDUSTRY is about to have its first complete census in many years. A force of 3000 persons is being employed to gather and compile information, and returns are already pouring into the Census of Business headquarters in Philadelphia. How this data is being assembled, analyzed and converted into composite statistics is most interesting.

From the moment the census report is obtained from a contracting firm, the information is carefully handled in a systematic and expeditious manner. Its confidential nature is guarded as carefully as money in a bank.

A more far-flung field organization could hardly be formed than is required for a nation-wide census. Each state is divided into supervisor districts, further sub-divided into many enumeration districts, based on the probable number of business firms as well as territorial extent.

There are more than 400 supervisor offices, from which the thousands of enumerators work. Yet the whole canvass is planned to the last detail. It moves with precision.

As the canvass of an enumeration district proceeds, the reports are assembled in folios at the supervisor's office and sent by registered mail to the Philadelphia headquarters. All checking in the field offices is restricted to features pertaining to the canvass—whether a report is complete and whether the canvass of an enumeration district is complete. That is the field job. As soon as all reports from a given district are obtained, that office is closed and the working papers follow the individual reports to headquarters.

As rapidly as the postoffice delivers the incoming reports, they are checked again to assure completeness of the canvass. Each enumeration district has an identification number, indicative of the State and County, as well as having definitely circumscribed territorial limits. Previous census records afford a means of checking on coverage and other phases of the canvass.

Released for editing and analysis, the reports are sorted by branches of business—construction, retail trade, wholesale trade, transportation, communication, business services, amusements, hotels, and the other branches covered by the census which is indicated by the form on which each report is made. After being sorted by major business classifications, the reports are sent to these business divisions in the Bureau, which are headed and supervised by division chiefs who are specialists in their respective fields.

Within the construction division the reports are further sorted by kinds of construction—building, highway, heavy construction, and so forth. Then groups of clerks trained in each of these fields examine and test the reports, code them and prepare them for statistical tabulations.

The kind-of-business classification is established by the answer to a specific question, and further verified by other information on the

schedule received. This classification is usually the popular designation by which the concern is known, such as "air conditioning", or in accordance with the principal kind of construction performed.

Each individual report is carefully edited to eliminate errors in preparation — misplaced entries and inconsistencies. Code symbols are entered on the report for use in mechanical tabulation. A certain code number may mean that the contracting firm is independent and individually operated, or a unit of a branch system, or whatever may be the form under which it is operated. In other fields of business, such as wholesale, or banking, or real estate, similar subdivisions of the business are designated by code numbers.

Entries under each main inquiry on the schedule-report are handled separately, and carefully studied for consistency. Operating revenues, operating expenses, and employment data are scanned and scrutinized by different individuals for inaccuracies—assayed to prevent distortion of the composite statistics. In this respect, the work is particularly analogous to that in a factory where each piece is calibrated and tested before assembly.

Each part of the report is also edited and coded by different persons—and subsequently is reviewed and critically analyzed. The whole set-up for this work is a system of checks and balances, in which the element of error approaches the irreducible minimum. Then the individual figures are consolidated with others of similar classification and lose their individual identity. No figures for a classification (whether a business, area or type of operation) are published unless enough individual reports are included to make it impossible to distinguish the facts about any particular individual firm or corporation.

Every step in the work makes for accuracy in the final results. All changes and adjustments are made in accordance with approved statistical methods, usually after reference to the business involved, and only by persons properly trained for that work.

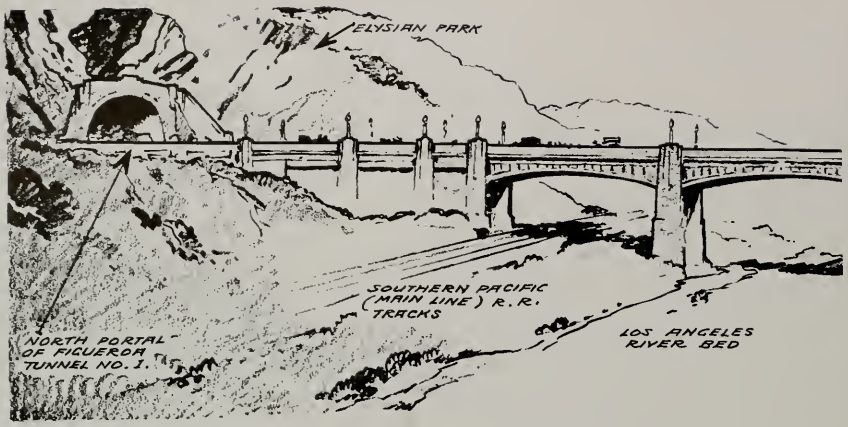
Each detail on a report is prepared carefully for the composite statistical arrays—to be shown by kinds of business and by area subdivisions, by types of operation and by legal forms of organization, and under the various other headings.

When finally released by the editing and coding groups, the reports are consecutively numbered and assembled in folios by states, counties and cities. The folios are then ready to be sent to the machines where the data will be transformed to punch-cards, preparatory to subsequent machine tabulation. It is from the mass totals produced by these machines that the many statistical tables are prepared which finally become the formal printed census reports.

A force of nearly 3,000 workers, under the direction of Fred A. Gosnell, Chief Statistician in charge, is required at the Philadelphia office of the Bureau of the Census for this work.

FRONT OF SAN FRANCISCO TERMINAL, showing elevated ramp for three tracks of street cars. The building provides a waiting room 135 feet wide by 220 feet long

SAN FRANCISCO TERMINAL of Bay Bridge as it will appear when completed is indicated by white arrow. The building will accommodate six tracks of the interurban railway loop
Illustrations Courtesy California Highways and Public Works



OVER RIVER, RAILROADS, AND BOULEVARDS, a wide 1100-foot viaduct will carry the highway extension link of Figueroa Street from Tunnel No. 1 of the chain of three tunnels built through Elysian Park in Los Angeles to join North Figueroa Street on the other side of the river valley. The main river span will be 200 feet long. This sketch by Charles Owens is reproduced by courtesy of the Los Angeles Times

Courtesy California Highways and Public Works

TUNNEL VISTA SHOWING THREE COMPLETED FIGUEROA STREET BORES THROUGH PARK

Los Angeles, California

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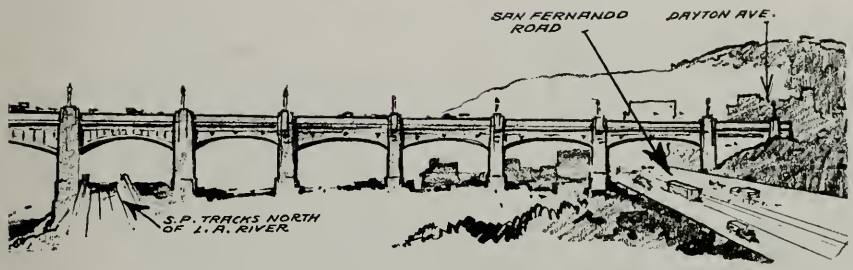


END BARRIER TO LOS ANGELES TRAFFIC

by Chas. W. Jones

FOR years the mountains and the Los Angeles River have been a barrier to through traffic on Figueroa Street, one of the main north and south traffic arteries in the City of Los Angeles. This traffic in the past has been forced to take a long circuitous path around the mountain, through the congested business section of the city.

At last, due to the combined efforts of the city, the state, and the Federal government, the engineering dream of breaking through the barrier to secure a direct route for Figueroa Street traffic is about to be realized. The complete program includes a chain of four tunnels,

TUNNEL PORTAL AT ELYSIAN PARK AND RIVERSIDE DRIVE, LOS ANGELES, WHERE VIADUCT WILL CONNECT

three of which have already been bored through the mountain, and the fourth is under construction.

As part of this program, the state has recently awarded a half million dollar contract for the construction of a 1000-foot viaduct link starting at the northerly tunnel portal in Elysian Park.

The viaduct will cross above the various tracks of the Southern Pacific Railroad, the tracks of the Los Angeles Railway, the Los Angeles River, and San Fernando Road to join North Figueroa Street, and will also make direct connection with the proposed Arroyo Seco Parkway to South Pasadena and Pasadena, a new route added to the State Highway System by act of the legislature of 1935.

The engineering forces of the state of California and the city of Los Angeles cooperated in designing the viaduct. It will be an imposing structure with a main river span 200 feet long crossing the river at an elevation of some 70 feet above the stream bed. Long spans will cross the railroad tracks on each side of the river. The vehicular roadway will be 44 feet in width and, in addition, there will be sidewalks on each side of the roadway.

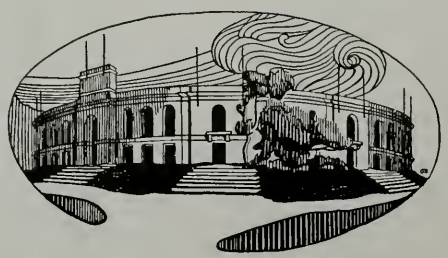
This project, which will give employment to many persons, will be financed from Federal funds made available under the 1935 apportionment of Emergency Relief funds. The work will be done under the direct supervision of the state.

Viewing the project from a construction standpoint, some of the major problems will be the building of deep river piers adjacent to the railroad tracks without endangering or interfering with railroad service and the spanning of San Fernando Road without interrupting street car and vehicular traffic. It is proposed to construct the main river pier on the north bank of the Los Angeles River around and over the large Glendale outfall sewer without injuring that structure.

The erection of the unusually long steel plate girder spans, which will arch the tracks and the Los Angeles River will also be an interesting construction problem.

The contract for the viaduct has been awarded to the low bidder on a bid price of $578,420. However, supplemental work to be accomplished by the Southern Pacific Company, in addition to a contingency item, will bring the cost of this project to approximately $678,000. The contract provides for 300 working days in which to complete the viaduct.

The North Figueroa Street road, tunnel and viaduct projects will provide a continuous through artery for traffic to and from the rapidly developing areas across the river at the north, northwest, and northeast of Los Angeles.



PROGRAM FOR OPEN COMPETITION FOR OREGON STATE CAPITOL

THE Oregon State Capitol Reconstruction Commission proposes to hold a competition for the selection of an architect to design and supervise the construction of a Capitol building at Salem, Oregon.

There are to be no specially invited competitors.

The Commission has retained the services of Carl F. Gould, F.A.I.A., of Seattle, Washington, as its technical adviser in the preparation of the program given below.

The attention of competitors is called to the following sections of the Oregon Code, 1930, and Amendments thereto relating to the practice of the profession of architecture in Oregon:

OREGON CODE, 1930

68-306. EXAMINATION—CERTIFICATE OF REGISTRATION—NONRESIDENTS.

(c) Any person who is a registered or certified architect in another state, where the qualifications are equal to those required in this state shall, in the discretion of the board, be entitled to a certificate of registration without examination.

OREGON CODE, 1935, SUPPLEMENT

68-304. UNLAWFUL TO PRACTICE PROFESSION OF ARCHITECTURE WITHOUT OBTAINING CERTIFICATE — CORPORATIONS AND PARTNERSHIPS. In order to safeguard life, health and property, and, to eliminate unnecessary loss and waste in this state, it shall be unlawful for any person to practice the profession of architecture or to assume or use the title of architect, or any title, sign, cards, or device indicating, or tending to indicate, that such person is practicing architecture or is an architect, or to represent in any manner that he is an architect, without first qualifying before the board or obtaining a certificate of registration as provided by this act.

This act shall not be construed to affect or prevent the practice . . . of engineering by a professional engineer duly licensed under the laws of the state, nor apply to any person engaged in architecture or engineering work as an employee of an architect or registered engineer, nor shall it prevent draftsmen, clerks of the work, superintendents and other employees of registered architects and registered professional engineers under provisions of this act, acting under instructions, control or supervision of their employers. Provided that such engineer, person, or persons, designated shall not use the designation architect, architectural or architecture unless licensed under the provisions of this act. . . .

No corporation or stock company shall be entitled to a certificate to practice architecture. . . .

A partnership may engage in the practice of architecture provided a firm name or title is used containing only the name or names of the registered architect or architects of such firm.

All such partnerships when organized or formed and when any change in the personnel of said partnership occurs, whether by withdrawal, addition, resignation or death, shall make and file with the secretary of the board of architectural examiners, a sworn statement giving the names and addresses of all such members.

68-308. REFUSAL TO GRANT AND REVOCATION OF CERTIFICATES—CHARGES—HEARING. The state board of architect examiners may refuse to grant or may revoke a certificate of registration to practice architecture in this state upon the following grounds, to wit:

1. The employment of fraud or deception in applying for a certificate of registration or in passing an examination as provided in this act.

2. Upon proof that the holder of such certificate of registration is falsely impersonating a practitioner or former practitioner.

3. That the holder of a certificate is practicing under an assumed, fictitious, or a corporate name contrary to the provisions of this act.

4. Upon proof that the holder of such certificate of registration is guilty of fraud or deceit, or of gross negligence, incompetency or misconduct in the practice of architecture.

5. For the conviction of a crime involving moral turpitude or proof of habitual intemperance, the using of morphine, opium, cocaine or other drugs having similar effect, by the holder of such certificate of registration.

6. Upon proof that the holder of such certificate of registration did wilfully evade or try to evade any or all laws, ordinances, codes, regulations governing construction and/or buildings, of the state or counties and cities of this state.

7. Upon proof that the holder of such certificate of registration permitted his seal to be affixed to any plans, specifications or drawings that were not prepared by him, or under his personal supervision, by his regularly employed subordinate or subordinates.

8. Upon proof that the holder of such certificate of registration did receive, unbeknown to the party or parties for whom he is doing work, such rebates, commissions, grants of moneys and/or favors, to which he is not entitled or justified in receiving.

9. Upon proof that the holder of such certificate is practicing contrary to the provisions and requirements of this act.

The state board of architect examiners shall have power to revoke, suspend, or annul the certificate of registration to practice architecture in this state, or an architect, or reprimand, censure or otherwise discipline an architect in accordance with the following provisions and procedure:

Any person may prefer charges against a holder of such certificate of registration to practice architecture. Such charges shall be in writing and sworn to by the complainant and shall be forwarded to the board of architect examiners, which shall act on such charge or charges at their next regular meeting. Any person who is a holder of a certificate of registration, or who is an applicant for a certificate of registration against whom any of the foregoing grounds for revoking or refusing a certificate of registration is presented to said board with a view of having the board revoke or refuse to grant a certificate of registration, shall be furnished with a copy of the complaint, and shall have a hearing before said board in person, or by attorney, and witnesses may be examined by said board respecting the guilt or innocence of the accused. Said board may prescribe rules and regulations under which applicants for certificates of registration, or persons whose certificates of registration have been revoked may apply.

For assistance in the construction of the Capitol, a Federal public works grant in the sum of $1,125,000 is being made. The grant is made on terms embodied in PWA regulations. A detailed statement regarding these regulations may be obtained from the Oregon PWA authorities, or Alton John Bassett, Secretary of the Capitol Commission, 714 Porter Building, Portland, Oregon.

Definition of Words and Terms

The words "The Act" as used in this program, unless otherwise stated, shall refer to Chapter 74, Oregon Laws, Special Session 1935.

The word "Owner" as used in this program, shall mean the State Capitol Reconstruction Commission, which is the duly authorized body to reconstruct the Oregon State Capitol Building.

P.W.A.: Federal Emergency Administration of Public Works.

Winner: Author of winning design.

Associate: The associate is the Oregon architect or firm of architects with whom the winning architect will be required to associate, if the winner is not an Oregon man.

Architect: Whenever the word "Architect" is used in this program, unless otherwise indicated, it shall include the words "or architects", and the words "or firm or firms of architects," and it shall mean, and include the winning architect, and associate architect, and any and all architects collaborating with any of them.

Conditions of Contract Between Architect and Owner

Duties of the Architect

The Winner agrees to make such revision of his competitive scheme as may be necessary to complete the preliminary studies and to provide the drawings and specifications necessary for the conduct of the

work and to obtain the approval of the Owner and the State Director for the P. W. A. These drawings and specifications must be delivered to the State Director of the P. W. A. by September 15, 1936. All such drawings are instruments of service, except the drawings entered for the competition, and remain the property of the architect.

For the purpose of taking bids the winning architect will be required to furnish 12 complete sets of prints and specifications.

The Winner agrees to prepare the design of the entire building or buildings, and the design of its constructive, its engineering requirements, special or otherwise, decorative work, and fixed equipment, and if further retained by the Owner, its movable furniture, the treatment of its grounds, and to direct the design of the sculptural features and/or mural paintings.

The associate agrees to prepare or advise as to all forms connected with the making of proposals and contracts, to issue all certificates of payment, to keep proper accounts and generally to discharge the necessary administrative duties connected with the work.

The associate agrees to supervise the execution of all work committed to his control.

The associate agrees to furnish the Owner progress reports from time to time during construction, and a comprehensive report upon the building when complete. Included in this report shall be all guaranties, names of all contractors and sub-contractors, names of all men or firms furnishing materials and their addresses for reference and as might be of value in maintenance of the building.

In consideration of the submission of drawings in this competition, and the mutual promises enumerated in the subjoined "Conditions of Contract between Architect and Owner," the Owner agrees, and each competitor agrees if the award be made in his favor, immediately to enter into a contract containing all the conditions herein following; including the conditions in the agreement between the Winner and the Associate, and until such contract is executed, to be bound by the said conditions.

The duties of the Winner include all of the customary duties of an architect except those specific duties contracted for by the associate.

The Agreement

The agreement into which the winning and associate architect shall be required to enter is substantially as follows:

The adjudged winner of the competition, if not a resident of Oregon, will be required to associate himself with a registered architect residing in the State of Oregon. The associate architect will be selected by the Owner in consultation with the technical adviser from those judged competent and acceptable to the winner and the Public Works Administration State Director.

Article 1. That said winner shall make all sketches, working drawings, details, specifications, etc., called for or required by the contract with the Owner, and shall conduct such conferences and make such inspections of the work as shall be required by said contract, the Owner or by the exigencies of the work, and shall at all times maintain in fact his position as architect under the terms of said contract with the Owner.

Article 2. That said associate shall represent the Winner during his absence from Salem and shall perform for him all the services required in the proper supervision of the work provided for in the contract between the Winner and the Owner.

Article 3. That said associate shall at no time have authority to issue orders to prepare or change drawings or specifications, which shall materially modify those prepared by the Winner, nor shall they in any way supplant said Winner as the architects in any work connected herewith except as otherwise provided in this agreement, or with the consent of the Winner.

Article 4. That the said associate shall at all times keep in close contact with the work, by such personal inspection at least once each week, and within three days of the day on which certificates are issued, as hereafter provided; shall be subject at all times to calls from the Owner for conferences as representing the Winner, and shall keep the Winner advised as to the progress of the work by a written report at least once every two weeks.

Article 5. That said associate shall pay at his own expense for all telephone and telegraph charges, stationery, postage, clerical and other office expense, in Salem or elsewhere in Oregon, incidental to the proper performance of this agreement, and said winner shall pay at his own expense all similar expenses from his own office.

Article 6. That said associate shall, in the absence of the winner have full authority in the direction of the work as representative of the winner to the degree herein provided, and all orders or directions issued by said winner shall be issued through the said associate.

Article 7. That said associate shall direct the taking of bids and make his report and recommendations to the owner, and shall receive all applications for payments from the contractors, shall properly check same and shall issue certificates for payments to the contractors on behalf of the winner as provided for by the contracts.

Article 8. That, in consideration of and conditioned upon the faithful performance by the said associate of the duties provided for in this agreement, the said winner agrees to pay to the said associate two percent of the cost of the work, which sum shall be computed by deducting one-third of the architectural fees that are paid to the winner, except that the winner and associate shall share the cost of the mechanical engineering work, in the proportion of two to one, which work shall be based on 1½% of its cost.

Article 9. That all payments to both the winner and to the associate shall be made at the same time as provided elsewhere in this program conditioned only upon the progress of the work, but not conditioned upon the work of the other; and that these payments shall be made directly from the Owner to each of the parties hereto.

Article 10. This agreement shall at all times be subject to cancellation upon direction of the Owner, and upon reasonable notice. Upon such cancellation the complete records and files of the party or parties whose services are to be terminated shall be turned over to the Owner. Such cancellation shall take place only should the architect in the judgment of the Owner prove incompetent, and after his having received equitable compensation for all work performed up to time of removal.

Article 11. This agreement pertains to the work connected with the construction of the Capitol building at Salem, and to no other work whatsoever.

Article 12. It is understood and agreed by the parties hereto that the work forming the subject matter of this contract is being financed in part by the Federal Emergency Administration of Public Works of the United States of America, and is subject to all of the rules and regulations issued by it, governing construction work and the matter and method of keeping records thereof. And the parties hereto agree to assume that part of this expense, which by its nature attaches itself to that share of the work undertaken by each of the parties hereto.

Duties of Owner

Payment

The Owner agrees to pay the architect for his services, which include the necessary engineering services for heating, ventilating, and electric work, a sum equal to six (6) per cent of the cost of the completed work that comes under his supervision, as evidenced by the contractor's certificates issued, to be divided between the winner and associate in accordance with articles 8 and 9 of their agreement.

The owner further agrees to reimburse the architect the cost of transportation and living incurred by him while in the discharge of duties connected with the work, an amount not to exceed $5000.00. Such traveling expenses shall be incurred only as authorized by the Owner.

The times and amounts of payments to the architect shall be as follows:

Upon the announcement of the award by the Owner, the Winner will receive 1/10 of the total commission.

Upon the Owner's approval of preliminary sketches, 1/10 additional.

Upon completion of the working drawings, 2/10 additional.

Upon P. W. A. approval of working drawings, 2/10 additional.

The remainder of the fee as determined by the amounts of the certificates of payment for work performed issued to the contractor.

All sets of prints and specifications that may be necessary over and above the 12 sets furnished by the Winner will be paid for by the Owner at actual cost.

The Owner reserves the right to require the Winner to furnish a plaster model of the proposed building; the actual cost of which will be paid for by the Owner.

Information, Clerk of the Works

The Owner agrees to furnish all information as to requirements; to pay for all necessary surveys, borings and tests, and, after the building contracts have been awarded, for the continuous service of a clerk of the works of approved competence whose selection shall be agreed upon mutually by Owner and Architect and whose duties are subject to the direction of the Architect.

Reports made by the clerk of the works shall be made in duplicate, one copy to be furnished to the Owner and one copy to the Architect.

Awards

The Owner has authorized, and agrees to make the following awards:

First Award: To the author of the winning design, the architectural commission.

Five additional awards: To the authors of the next five most meritorious designs, the sum of $1500.00 each.

The order for payment of the awards will be made by the Owner within 20 days after the decision of the judges has been announced.

After the award is made to the winner, a complete list of competitors will be sent to each competitor, together with the report of the jury.

Communications

Provision for Anonymity During Progress of the Competition

Mandatory

Questions must be made anonymously to the technical adviser, who will answer by simultaneous bulletins to all competitors, and these bulletins shall become part of the program. It is left to the discretion of the technical adviser to determine the pertinence of questions, and the necessity for a reply.

No competitor shall communicate — orally or in writing—with the Owner, the executive committee, or the jury, nor with the technical adviser except by question submitted anonymously through the Owner's secretary.

Provision for Date After Which No Questions Will be Answered

Mandatory

No communications will be answered that are received after April 10, 1936.

Anonymity of Drawings

Mandatory

The drawings to be submitted shall bear no name or mark which could serve as a means of identification, nor shall any such name or mark appear upon the wrappings of the drawings, nor shall any competitor directly or indirectly reveal the identity of his design, or hold communication regarding the competition with the owner, nor with the jury, nor with the technical adviser, except as provided for under "COMMUNICATIONS," above.

It is understood that in submitting a design, each competitor thereby affirms that he has complied with the foregoing provisions in regard to anonymity and agrees that any violation of them renders null and void this agreement and any agreement arising from it.

Method of Submitting Drawings

Mandatory

Accompanying each set of drawings shall be a sealed, opaque, white envelope, 4″x9½″, without name or marking, enclosed within the package, containing the name and address of the competing architect.

The technical adviser will open the package of drawings in the presence of the Chief Justice of the Oregon Supreme Court, and will place a number upon each of the drawings and a similar number upon the blank envelope. The envelope will be deposited in safekeeping until opened by the technical adviser in the presence of the jury and the Owner, after the selection for the award has been made by the jury.

Credentials of Competitors

Mandatory

There shall be contained in each set of drawings a sealed package wrapped in white, opaque paper with no marking of any kind upon it, which will be marked for identification by the technical adviser, and will not be opened until the envelope containing the author's name is opened. This package must contain the following:

(1) The competitor's name and address.

(2) A statement that he is a citizen of the United States.

(3) A statement that he is an architect registered in his own state or by the National Council of Architects Registration Board.

(4) A statement that the drawings were made in his office and that he affirms the authorship is his.

(5) A statement concerning his education, offices he has worked in, and how many years he has been in practice.

(6) List of three projects of some magnitude executed under his direction, to show capabilities for preparing working drawings.

(7) Photostatic copies of two (2) sheets from signed contract plans of buildings executed under his direction and two (2) photos of executed buildings.

If a competitor is unable to submit such copies because of dissolution of partnership, destruction of records or any other reason, he may submit evidence relating to the fact and supply other material in evidence of his qualifications for the consideration of the technical adviser.

(8) A statement that in submitting drawings for this competition the competitor agrees to abide by all the provisions and rulings that are made or implied in this program and as may be interpreted by the technical adviser.

Should an architect, wishing to enter this competition, realize he may not qualify under the above "Credentials of Competition," he may, provided he

is a registered architect, associate himself with one who does so qualify.

The competitor must declare his intention of entering the competition before April 10th, 1936, and any association made at that time must remain in force as to the winner until completion of building.

Examination of Design and Award

After the competition has closed, the technical adviser will open the packages as provided, and will examine the designs to ascertain whether they comply with the mandatory requirements of the program, and will report to the jury any instance of failure to comply with these mandatory requirements, but shall convey no information to the jury that might prejudice its independent judgment.

The Owner agrees that the jury will satisfy itself of the accuracy of the report of the technical adviser, and will place out of competition and make no award to any design which does not comply with these mandatory requirements. The jury will carefully study the program and any modifications thereof, which may have been made through communications, and will then consider the remaining designs, holding at least two sessions on separate days, and considering at each session all the drawings in competition, and will make the awards, by secret ballot, and by majority vote.

In making the award the jury will thereby affirm that it has made no effort to learn the identity of the various competitors, and that it has remained in ignorance of such identity until after the award was made.

Date and Place of Receiving and Time Allowed

Mandatory

All packages containing drawings entered in this competition must be received at the office of, and be addressed to Arthur S. Benson, Clerk of the Supreme Court of Oregon, Salem, Oregon, on or before the 22nd day of May, 1936. These packages shall be secured in ordinary detail paper, sealed with plain wax, and shall bear no marks, save the above address, and shall be delivered by an express company, and in no other way. All drawings except those receiving awards will be returned to their authors within ten days after the date of the award, the Owner assuming no responsibility in case of loss or damage in transit or otherwise. Those designs receiving awards will be returned in similar manner after the close of the public exhibition. The drawings of the winner shall be retained. The awards are to be made on or before May 28, 1936. In making the awards the jury shall indicate an order of choice from first to sixth but shall not make this decision public unless a condition arises as suggested in second paragraph of Authority of Jury below, and then only to the technical adviser.

Jury

The Jury shall consist of two architects, neither of whom shall be a resident of Oregon, two members of the commission, and one outstanding layman from Oregon. The professional members of the Jury shall be men of recognized standing. The names of the jurors will not be announced prior to the award.

Method of Selection

The Jury is to be selected by the owner. The technical adviser is not a member of the Jury. The architectural members of the Jury are to be selected by the Owner from a list of names submitted by the technical adviser. The Jury, two members of which will come from states other than Oregon, will convene on the 25th day of May, 1936, at 9:00 a.m.

Authority of Jury

The Jury after viewing the drawings, and having satisfied itself after advice by the technical adviser that they conform to the mandatory provisions of the competition, will deliberate until a conclusion is reached by a majority. It will then prepare a written report containing the verdict. The report of the Jury shall be made public and the decision will be announced by the owner.

If upon examination of the competitor's credentials by the technical adviser, it is his opinion that the author of the design selected by the Jury has not shown that he has the requisite experience, the matter shall be referred to the Owner for decision, and the competitor's plan in question, will be designated as "qualified" or "not qualified," according to the decision of the Capitol Building Commission.

If the decision of the owner is that the competitor is not qualified, the credentials of the competitor placed second shall be examined and the award made to him if qualified. This procedure shall be followed in order of award until a qualified architect is named.

The opening of the envelope containing the name of the author of the selected design will automatically close the contract between him and the Owner, subject to his qualifications and to the correctness of the representations made by the competitor.

The Site

The site available for the Capitol building is the property owned by the state, as described in section 6 of the act, and as shown upon the site plan which is inserted in the official program. Under the present law the commission can only consider this particular

property as available for the construction of the Capitol building.

The power plant shown on the site plan is built underground and will remain in use to serve the Capitol building. The Capitol building shall be designed to make use of this heating plant.

The State Office building, the Supreme Court building, and the Agriculture building shown upon the site plan are owned by the state and located on state property. However, these buildings need not influence the architectural style or treatment of the site of the main Capitol building.

In developing the plan lay-out, it is suggested that Summer Street be considered as the axial approach to the Capitol building. It is possible that the state will ultimately acquire the half-blocks or full blocks on each side of Summer Street, extending a block or more to the north of Court Street. Competitors may assume that this additional property will be acquired, and at their discretion may include other state buildings in the group lay-out. At least one other building must be shown, namely, a State Library building with approximately 20,000 square feet ground floor area. Other possible future structures include an additional State Office building, a building for storage of archives, and a state museum.

The trees which are apparent from the air-view of the site in the official program, are of mature growth, giving character and adding to the beauty of the capitol grounds and Willson park. As many of these trees should be preserved as possible.

In preparing and submitting drawings, the entire site including Willson park may be assumed as level.

Cost

Mandatory

For the purpose of this Competition the cost of the building is to be figured at 80c per cubic foot, and the total thereof, figured on this basis, shall not exceed $2,200,000. This sum shall include architect's fees, but shall not include the cost of furniture and furnishings.

Material

The building shall be of fire-resisting material and constructed according to the best practice. All materials are to be of the best quality, with preference given to the use of materials that are manufactured or can be procured in the state of Oregon. Material to be used for the facing of the exterior of the building shall be left to the discretion of the competitors.

Cubage

Mandatory

Cubage shall be so computed as to show as exactly as possible the actual volume of the building, calculated from the finished level or levels of the lowest floor to the highest point of the roofs, and contained within the outside surface of the walls.

The actual volume of all architectural features adding to the bulk of the building, shall be included in computing the cubage. Light walls of an area of less than 400 square feet shall not be deducted. One-half of the volume of porticos with free-standing supports, if any, and other similar projections, shall be taken. Minor extraneous projections constituting features of exterior design shall not be included.

In calculating cubage, account shall be taken of variations in the exterior wall surface, as, for example, the projection of a basement story beyond the general line of the building.

A cube diagram on tracing cloth, showing method adopted in cubing shall accompany each set of drawings. This diagram shall show in plan the wall face at the main story, and shall scale accurately, with principal dimensions figured. A tabulation showing how the cube was obtained shall appear on the cube diagram.

Design

There shall be no descriptive matter accompanying the design.

The competitor may accent the traditional, the more functional or modern, or he may combine their influence in his design. An outstanding solution is desired and one that will be looked upon now, and hereafter, with an ever awakening interest by the people of the State of Oregon.

Drawings to be Furnished

Mandatory

A. Block plan showing the location and relationship of the described buildings and their surroundings as shown on the city plan, at scale of 1/64" equals one (1) foot.

B. Plans of all floors, including basement, at scale of 1/16" equals one (1) foot.

C. Front elevation, scale at 1/16" equals one (1) foot.

D. Side elevation 1/16".

E. One longitudinal section, scale at 1/16" equals one (1) foot.

The elevation shall be rendered in monochrome. The floor plans shall show where the solids are cut filled in full black. Fixed furniture only shall be shown, and no elaboration of corridors or hall floors permitted. The section will not be rendered except a wash where the solids are cut.

The names of the various parts of the plans shall be lettered in a single-line block letter and each room

shall have its total floor area and dimensions marked in figures.

Each drawing shall have the inscription, "Oregon State Capitol Competition" and subtitle specifying the subject of the drawing and the scale to which it is drawn. There shall be no other notes or descriptive matter shown on the drawings.

All lettering shall be a single line. All drawings shall be upon white mounting board. Sheets of any one competitor shall be of a uniform size. Each sheet shall have a plain border of a single line only—this border to show a uniform margin of one-half (1/2") inch.

Accommodations Required

The various departments of the State Government will require rooms and space in the locations and of the approximate sizes indicated on the schedule following. The size requirements stated in the schedule may be varied to the extent of not more than ten per cent above or below the figures given.

The setting aside of extra space, marked "unassigned" for the use of minor departments, will not be prejudicial in the judgment of the drawings, provided that the total cubage limit is not exceeded.

The size and arrangement of toilet facilities, cloak rooms, storage rooms, etc., are left to the discretion of the designer, unless specifically scheduled.

The amount of space devoted to non-essential uses shall be reduced to a minimum, consistent with the monumental character of the building, and the necessity for providing adequate circulation.

Wherever storage space is located on a different level from the office space it serves, a private connecting stairway is desirable.

Schedule of Space Requirements

	Square Feet	
1. Legislative:		
(A) House of Representatives		
Chamber to seat 60 members	4,000	
Public Galleries	1,000	
Lounge and Lockers (including provision for a limited number of women members)	1,600	
Large Committee Room	1,250	
Large Committee Room	800	
11 small committee rooms (average @ 300 sq. ft.)	3,000	
Stenographers room	500	
Engrossing room	600	
Speaker's Office	550	
Post Office, Sergeant-at-Arms, Bill Clerk, etc.	700	
Total		14,300
(B) Senate:		
Chamber to seat 30 members	3,200	
Public Galleries	1,000	
Lounge and Lockers (including provision for a limited number of women members)	1,400	
Large Committee Room	1,200	
Large Committee Room	800	
11 small committee rooms (average @ 300 sq. ft.)	3,300	
Stenographers room	500	
Engrossing Room	500	
Presiding Officers office	600	
Post Office, Sergeant-at-Arms, Bill Clerk, etc.	700	
Total		13,200
(C) Miscellaneous:		
Ways and Means Committee:		
Large Room, 1,200 sq. ft.; two small rooms @ 200 sq. ft.; Stenographers and Clerks Office, 250 sq. ft.	1,850	
Hearing Room, seating capacity 200	1,850	
Mailing Room	550	
Lavatories, toilets, etc.		
*Separate exits should be provided for members of both Legislative Houses, distinct from the main entrance to the building		
2. Executive Department		
(A) Governor:		
Reception Room	800	
Secretary's private office	350	
Governor's office	850	
Governor's private office	300	
Two conference rooms and 300	600	
Stenographers' work room	250	
Meeting room (used jointly with Board of Control)	1,000	
Total Office Space		4,150
Filing Room	200	
Vault	400	
Storage (may be in basement)	600	
Total Storage Space		1,200
Toilets, etc.		
Location: It is desirable to have the Governors office easily accessible or adjacent to both the House and Senate, and to the Board of Control. A private exit is desirable.		
(B) Budget Department:		
Budget Division	400	
Property Comptroller Division	800	
Budget Director office	200	
Total Office Space		1,400
Small Vault	50	
Total Storage Space		50
Toilet		
Location: Adjacent to Governor		
(C) Secretary of State:		
Reception room	500	
General office	3,500	
Secretary of State Private office	400	
Chief Deputy Private office	250	
Conference room	350	
Auditing Division	800	
Accounting Division	900	
Bookkeeping Division	900	
Total Office Space		7,600
Vault (two levels @ 400)	800	
Storage (may be in basement)	10,200	
Total Office Space		11,000
Toilets, etc.		
Location: Preferably on 1st floor		
(D) Treasury Department:		
Lobby (in front of counter)	600	
General office (behind counter)	1,800	
State Treasurer Private office	400	
Deputy Treasurer Private office	250	
Inheritance Tax Division	400	
Bookkeeping Division	300	
Cashier	350	
Total Office Space		4,100
Vault (two levels @ 400)	800	
Sorage (may be in basement)	4,800	
Total Storage Space		5,600
Toilets, etc.		
Location: Near Governor, Secretary of State, and Tax Commision		
(E) State Tax Commission:		
Reception Lobby	300	
Secretary's office	200	
Commissioner's offices (3 @ 250)	750	
Work room	2,000	
Work room	1,000	
Conference room	600	
Total Office Space		4,850
Two Vaults (total)	250	
Storage (may be in basement)	850	
Total Storage Space		1,100
Toilets, etc.		
Location: Preferably near Treasurer and Secretary of State		
(F) Board of Control		
Reception Lobby	520	
Secretary's office	420	
General office	4,500	
Meeting room (see requirements for Governor)		
Total Office Space		5,440
Storage (may be in basement)	1,040	
Total Storage Space		1,040
Toilets, etc.		
Location: Near Governor, Secretary of State, State Treasurer and Budget Department.		
(G) State Land Board:		
Lobby	300	
Main Work room	1,200	
Private office	200	
Conference rooms (2 @ 200)	400	
Total Office Space		2,100
File Room (may be in basement)	500	
Vault	200	
Total Storage Space		700
Toilets, etc.		
Location: Near Governor, Secretary of State and State Treasurer		
3. Miscellaneous:		
Cafeteria and Kitchen	3,000	
Barber Shop	500	
Press room	700	
Building Superintendent and storage	500	
Ample provision for ventilating equipment and elevator service is required.		

THE BIGGEST JOB OF THE BUILDING INDUSTRY

(Prepared by the Federal Housing Administration)

LEADERS of the building industry who recently participated in a nation-wide radio forum all agreed that the biggest job confronting the building industry is stimulating the desire for home ownership.

Selling the idea of home ownership to the American people has been the biggest job of the industry for the past few years. The drop in home construction to one-tenth the average yearly building program of the years before the depression, made the solving of the problem essential. Until residence construction again approaches the volume of the pre-depression era, it is asserted, the building and heavy goods industries will lay dormant and general business recovery remain uncertain.

It was vitally necessary for the American people to begin that long deferred residence building program. Attempts were made during the past few years by various groups of the building industry to persuade the prospective home owner to take action. But not until 1935 was much headway made in this up-stream fight to revive residence building.

In 1935 the efforts of the building industry, in the discouraging struggle up-stream against the current of apathy brought on by the depression, received strong assistance from the Government, which made the going easier. The Federal Housing Administration's program for increased residence building was put in operation in the closing month of 1934.

By March 1935 the leading institutions had analyzed the plan and the necessary machinery for its operation had been set up, with the result that $4,772,728 of mortgages were accepted for insurance that month by the Housing Administration. From then on the amount of insured mortgages written by the lending institutions steadily increased until in the latter months of 1935 insured mortgages were being written at the rate of a million dollars a day. During the off season building month of January this year, $21,337,926 worth of mortgages were insured by the Federal Housing Administration.

Since the start of the Mutual Mortgage Insurance Plan the proportion of new residential building financed under the plan has steadily risen until it has reached 37.2 per cent of the estimated residential construction in the United States.

Since all of this new residence construction is being paid for out of private funds, there is no good reason why every man in the building industry should not get back of this movement to assure the continuance of sound, constructive stimulation of residence building. Building authorities agree that home construction will not assume its rightful place of leadership in the rehabilitation of the building industry until all branches of that industry act as a co-ordinating force to sell more and better homes.

The recognition of that fact by the industry may be a long forward step towards the realization of the purpose. But unless every person connected with the building industry regards himself as a working part of that co-ordinating force and puts all his energy back of the movement, complete success will be delayed.

To make this co-ordinating force effective, each individual connected with the building industry should approach his acquaintances, and look up others, who are or should be potential home owners. They should educate these prospects to the value of a home investment, and also clear up any doubts in their minds as to the manner of financing the construction of a new residence.

Progress in construction and improvements in methods of financing home construction have provided the industry with sound arguments to prove that any reputable man with a decent job can buy or build a home, if he has saved 20 per cent of its cost and has an income that warrants him to support a family according to American standards of living.

Those reasons are:

1—The general improvement of business conditions has made his job more certain.

2—The improvement of the mortgage market has made funds available for home building at rates lower than formerly obtained.

3—The establishment of the Mutual Mortgage Insurance Plan of the Federal Housing Administration corrects the faults of the old short term mortgage system with its first and second mortgages and their expensive renewal charges. It is based upon a single mortgage system which gives full security to the borrower as well as to the lender. Eighty per cent of the appraised value of the home (including house and lot) may be loaned on one mortgage up to a limit of $16,000. The amount of the down payment is reduced to a minimum of 20 per cent of the appraised value.

4—Under this Single Mortgage System, the borrower can pay off the mortgage in monthly installments which include that month's interest on the money borrowed, a portion of the principal, and installments on each year's taxes and each year's insurance premium. Thus over a given period—anywhere up to 20 years—the entire amount of the mortgage is paid off and the home is free of all debt.

5—At no time during the repayment of this type of insured mortgage will the owner be faced with the necessity of renewing the mortgage. No longer will lump-sum payments for taxes, premiums or interest come as an unpleasant shock to the budget.

6—There is a degree of safety in building a home financed under the Single Mortgage System that was lacking under the old system. The property standards laid down by the Federal Housing Administration assure the home builder of a square deal. In its insuring offices competent men, trained in the technique of architectural design, construction methods, valuation procedure and subdivision analysis, will protect the home builder's interests in regard to the design of his house, the quality of material, the workmanship, the price and the location.

Those reasons are fundamental arguments in favor of home ownership upon which the industry can well base its sales efforts.

ORIGIN OF NAMES OF CALIFORNIA COUNTIES

This is the sixth article in the series giving derivation of the names of California counties:

MARIPOSA COUNTY—Created February 18, 1850. One of the original twenty-seven counties of the state. The county took its name from the Mariposa river. The meaning of "Mariposa" in Spanish is "butterfly." There is some doubt as to how this stream derived its name. According to one story, in June, 1807, a party of Californians from the San Joaquin Valley made one of their annual excursions into the Sierra Nevada mountains for the purpose of hunting elk. Camping upon the banks of a river, they were charmed and delighted with the butterflies of most variegated and gorgeous colors that hovered around them in countless numbers, and because of this they gave to the stream the name "Mariposa." Another beautiful story, and probably more authentic, is that the first explorers in the mountains of that region beheld for the first time a pretty lily growing everywhere, gay-colored and spotted and in some respects resembling the wings of a butterfly. In their admiration, they gave to this dainty flower, the Calochortus, the name of Mariposa (butterfly) lily.

Mariposa is known as the "Mother of Counties" because it once comprised one-seventh of California's area. Here is the world-famous Yosemite Valley. The county embraces magnificent mountains, extensive forests, flower-strewn mountain meadows, cool canyons and sparkling streams. It is host to a greater number of tourists than any other county.

Not only is the scenery unsurpassed, but large ranches produce fine strains of hogs, sheep and cattle, grain and hay, mountain vegetables and fruits, and mining plays an important part in the industrial life and wealth of Mariposa. The old Mariposa mine has produced more than $7,000,000 in gold and the Princeton mine, $5,000,000. Ore in the Spread Eagle runs about $10,000 to the ton. Here is the great Exchequer Dam, 350 feet high, 960 feet long, with a carrying capacity of 75,000 second-feet and backing the waters of Merced River up for 12 miles. Population: 3233. Area: 1463 square miles.

MENDOCINO COUNTY — One of the original twenty-seven counties of California. The county derived its name from Cape Mendocino, which was discovered and named by Juan Rodriguez Cabrillo in 1542, and named for Don Antonio de Mendoza, the first Viceroy of New Spain, or Mexico, appointed by the King of Spain in 1535.

Magnificent Mendocino, in the Redwood Empire, is noted as a paradise for the tourist, vacationist and sportsman. In the empire as a whole are nearly 2000 miles of trout streams, many miles of ocean and surf fishing and game in abundance. Approximately 97 per cent of the world's redwoods are here, and the Redwood Highway through the county has the company of these giant trees for 100 miles. Salmon caught in the coast waters are shipped to all parts of the world.

Lumbering and commercial fisheries are Mendocino's principal industries. Ukiah, Potter, Round and Little Lake valleys are among the most productive agricultural areas in the state. Mendocino ranks fifth in the production of apples, eighth in pears, thirteenth in plums and prunes and tenth in juice grapes. Principal industries on the coast are lumbering, stock-raising, dairying, fruit raising, general farming and fishing. The Union Lumber Company at Fort Bragg is the third largest manufacturer of redwood lumber in the world. Population: 23,505. Area: 3539 square miles. (Next month—Merced, Modoc, etc.)

BOOK REVIEWS

THE ENGLISH COUNTRY HOUSE:—by Ralph Dutton; Foreword by Osbert Sitwell; Charles Scribner's Sons, New York; Price:—$2.75.

A very attractive book, containing some historical facts concerning its subject matter, and several superlative illustrations.

To the architect whose interests are particularly in connection with residence work, and to whom house architecture is paramount, this book will be a more than welcome addition to his library.

The end-papers are of special interest and are of a type not usually seen in the general run of books of this type.

ARCHITECTURAL DRAWING AND DETAILING:—by J. Ralph Dalzell; and James McKinney; Published by the American Technical Society, Chicago; Price:—$2.00.

A nicely arranged little manual, devoted to reference, general practice and technique. The chapters are grouped under such headings as Architectural Drawing; Architectural Detailing; Rendering In Pen and Ink; Landscaping.

With the Architects

ROOS BROS. IMPROVEMENTS

A. R. Williams, architect, Mercedes Building, San Francisco, has recently returned from the East where he went to gather information and ideas to be used in connection with extensive interior improvements to Roos Brothers' stores in California. The largest project will be extensions to the Market Street store of the firm in San Francisco. A portion of the first, second and third floors of the Phelan Building have been leased and the ground floor will be arranged for merchandise display while the second and third floors will be used by the executive and service departments. Plans for the exterior treatment of the building are being prepared by Bliss & Fairweather.

SAN FRANCISCO THEATER

The first new theater to be constructed in San Francisco for some time is being designed by John H. Ahnden, architect, 822-39th Avenue, San Francisco, for Messrs. Sbarboro & H. L. Tetjen. The new playhouse will be located on Chestnut Street, near Scott, San Francisco, and will cost between $75,000 and $100,000. L. H. Nishkian is the structural engineer. Mr. Nishkian is also the structural engineer for extensive alterations to the Capital Theater in Sacramento.

CHICO HOSPITAL

Messrs. Cole & Brouchard, of Chico, have completed working drawings for a $75,000 frame hospital building in Chico for the Enloe Hospital Association. W. Adrian is the structural engineer. Mr. Adrian is also doing the engineering work for a Class C store building on Grand Avenue, Oakland, Noble & Archie T. Newsom, architects, and a reinforced concrete gymnasium in Nevada City, William Mooser, architect.

MARIO CORBETT BUSY

New work in the office of Mario Corbett, Benjamin Franklin Hotel, San Mateo, includes a two-story duplex residence in San Francisco for Mr. and Mrs. A. V. Graalfs; a Colonial house in Hillsborough to cost $10,000 and some remodeling of the ground floor of the Mercantile Building, Market Street, San Francisco, for the Sterling Furniture Company.

APARTMENT BUILDING

R. R. Irvine, 3431 Market Street, San Francisco, has completed plans for a 3-story frame and stucco apartment house on Divisadero Street, south of Marina Boulevard, San Francisco; also a three-story frame apartment building at Broderick and Francisco Streets, San Francisco, both for Ben Liebman. The total cost of the improvements is estimated at $110,000.

EL CAPITAN HOTEL ADDITION

Scheduled to be completed by July 15, reconstruction of El Capitan Hotel and the erection of a new store building at the corner of 17th and M Streets in Merced, will begin within a month.

The new hotel will be four stories in height, will contain 33 rooms with baths and showers. It has been leased for ten years to John A. Robinson, Jr., operator of the Maze Hotel, who will operate both properties.

The lobby will be floored in tile, and in an inside patio will be a fountain. Air conditioning will be a feature of the hotel. Kent and Hass are the architects.

MILLER AND WARNECKE BUSY

Miller and Warnecke, architects in the Financial Center Building, Oakland, have been exceptionally busy since the first of the year. Scarcely a week has passed that they have not sent out plans for one or more new projects. During the present month plans have been completed and bids taken for a $20,000 frame apartment house in Oakmore Highlands for Dr. Leon R. Dupuich and a California Colonial brick veneer residence in Claremont Pines, Oakland, for Mr. and Mrs. George Harlow.

TO PREPARE SCHOOL PLANS

George Klinkhardt, formerly with Henry H. Meyers and now in the drafting department of the Oakland Board of Education, has been commissioned to prepare plans for a new unit to the Roosevelt School at San Leandro, estimated to cost $60,000. There will be eight classrooms and an auditorium. H. J. Brunnier is the structural engineer.

SAN FRANCISCO RESIDENCE

Plans have been completed by W. W. Wurster and a contract has been let to Lindgren & Swinerton, Inc., for a splendid new home for Mortimer Fleishhacker at Pacific Avenue and Pierce Street, San Francisco. It is estimated the improvements will cost in the neighborhood of $40,000.

ARCHITECT IN NEW OFFICES

Frederick H. Meyer has moved his offices from the Underwood Building to a roof studio in the Kohl Building, San Francisco. The new quarters of Mr. Meyer are not only conveniently located but afford splendid light and a fine view of the city and bay. Plenty of inspiration for the drafting force.

EXPOSITION BUILDING

Architectural drawings and specifications of the $150,000 Administration Building for the 1939 World's Fair have been completed and a construction contract has been awarded to Lindgren & Swinerton. The three story building will occupy the southeast corner of Bush and Stockton Streets, San Francisco, and will serve as the headquarters of the Exposition Company, now located in the Financial Center Building.

Architecture of the building, designed by William P. Day, Director of Works for the Exposition, is neoclassic with a modern influence. The general color of the building will be a light tan beige with the sash tinted a light emerald green. Modern illuminating effects will be provided to bring out the beauty of the Bush Street facade which includes a colonnade of cast stone.

NEW MEMBERS OF STATE BOARD

Governor Merriam has made a number of long deferred appointments on the California State Board of Architectural Examiners, Northern and Southern Divisions . The appointments are as follows:

Northern District: C. J. Ryland, Monterey, incumbent, term ending 1939; Harry J. Devine, Sacramento, incumbent, term ending 1939; Arthur H. Memmler, Berkeley, succeeding Chas. F. B. Roeth, Oakland, term ending 1940; W. C. Perry, Berkeley, incumbent, term ending 1940.

Southern District: Harold Burket, Ventura, incumbent, term ending 1939; Harold C. Chambers, Los Angeles, incumbent, term ending 1939; G. Stanley Wilson, Riverside, incumbent, term ending 1940.

Board of Registration for Civil Engineers: Henry R. Dewell, San Francisco, incumbent for term ending 1939.

NEW ARCHITECTURAL FIRM

Under the firm name of Smith, Carroll and Johanson, a partnership for the performance of architectural service was recently formed by Frank M. Smith Jr., Theodore B. Carroll and Perry Johanson with office at 4512 University Way, Seattle. Mr. Carroll graduated from the School of Architecture, University of Washington, several years ago, and recently passed the Washington state professional examination, and was issued a license to practice.

OAKLAND STORE BUILDING

A contract has been awarded by Williams and Wastell, of Oakland, for the construction of a Class C reinforced concrete store building on Grand Avenue, Oakland, for J. W. & L. E. Dinsmore. Contract price was $12,000.

PIEDMONT RESIDENCE

Frederick H. Reimers, 233 Post Street, San Francisco, has completed plans and awarded contract for a $35,000 California Colonial residence in Piedmont for Mr. Captoin.

PORTLAND CHAPTER COMMITTEES

Committees to handle Chapter activities for the 1936 season are announced by President Aandahl of the Oregon Chapter as follows:

Membership: Hollis Johnston, chairman; John T. Schneider, Richard Sundeleaf and C. H. Wallwork.

Building Laws: William G. Holford, chairman; Fred S. Allyn, George H. Jones and F. T. Webber.

Professional Practice: William H. Crowell, chairman; Harold W. Doty, Leslie D. Howell, C. D. James and Jamieson Parker.

City and Regional Planning: Harrison A. Whitney, chairman; Pietro Belluschi, Hollis Johnston and Folger Johnson.

Public Information: Roi Morin, chairman; Harold D. Marsh, George H. Jones and Glen Stanton.

Education: Glenn Stanton, chairman; Roscoe Hemenway, Ernest Tucker and W. R. B. Willcox.

Legislation: Walter E. Church, chairman; Leslie D. Howell, Francis Jacobberger and Clifford Claussen.

Entertainment: Harold W. Doty, chairman; Francis Jacobberger, Roi Morin, Clarence Wicks and Thayne Logan.

Public Works: Jamieson Parker, chairman; Ormond R. Bean, Hollis Johnston and David L. Foulkes.

Exhibition: Herman Brookman, chairman; Margaret Fritsch, John R. Dukehart, Abbott Lawrence and Wyman K. Bear.

Special Committee on Honor Award: Roi Morin, chairman; Fred Aandahl, Herman Brookman, Harold W. Doty and Jamieson Parker.

Subcommittee on Competitions: Fred Aandahl, chairman; William H. Crowell and William G. Holford.

OREGON CAPITOL COMPETITION

An architectural competition to select plans for the new Oregon State Capitol will close May 22 under a schedule adopted tentatively by the State Commission in charge of rebuilding the Capitol. The jury will make the award on or before May 29. Final plans are to be submitted by Sept. 15.

Two architects, not residents of Oregon, two capitol commissioners and one layman will compose the jury. Their identity will not be disclosed prior to the award.

Cost of the capitol has been set at $2,200,000, and architects will be instructed to give preference to Oregon materials and products.

A fee of 4 percent will be paid the architect who designs the $2,200,000 building, if he resides outside the state. If a non-resident architect is selected he must have an associate in Oregon, who will be paid an additional fee of 2 percent. The non-resident architect will be allowed $5,000 for traveling expenses in addition to his fee. Architect Carl F. Gould of Seattle is the technical advisor.

STRUCTURAL ENGINEERS ACTIVE

The Structural Engineers Association of Northern California has recently held two meetings of exceptional interest to the members and invited guests, with large attendances at both affairs.

The Golden Gate Bridge was the subject of an interesting talk by A. F. McLane, at the February 11th meeting of the Association in the Engineers' Club, 206 Sansome Street, San Francisco. The speaker exhibited a number of views of the bridge and answered questions in regard to the progress work.

On March 17 the Association met in Oakland, joining with the East Bay structural engineers in a day of sight seeing and good things to eat. After a visit to the East Bay terminals of the San Francisco-Oakland Bay Bridge the members and guests viewed some elaborate tests of steel sections of the Bay Bridge at the University of California laboratory. Later in the day a general meeting was held at which short addresses were made by Oakland city officials and officers of the Engineers' Association.

At 6:30 o'clock dinner was enjoyed at the Hotel Oakland. The committee in charge of the affair consisted of B. J. Osborne, Prof. C. F. Wiskocil, Prof. R. E. Davis, W. Adrian, A. W. Anderson, M. P. Kitchel, E. H. F. Frisell, W. G. Corlett, H. A. Cox and V. R. Sander. Wm. H. Popert was chairman of the publicity committee.

John B. Leonard has been named president and W. Adrian vice-president of the Association for 1936. The directors are Wm. H. Popert, Jesse Rosenwald and John J. Gould.

Members of the executive committee are Erle L. Cope, L. H. Nishkian, H. M. Engle, A. V. Saph, Jr., A. W. Anderson, H. B. Hammill and Theodore P. Dresser, Jr.

ENGINEERS RECEIVE PERMITS

The California State Board of Registration for Civil Engineers, at its meeting held in Los Angeles, March 4, issued certificates of registration to

O. H. Amman, New York City, N.Y.; Wm. P. Creager, New York City; Robert W. Wood, New York City; E. A. Dockstader, Boston; Theodore C. Coombs, Los Angeles.

Authority to use the title "structural engineer" was granted to Hunley Abbot, New York City; Ernest Hillman, Los Angeles; Peter A. Horn, Los Angeles.

The Board approved for examination in Civil Engineering Design and Construction, the following applicants:

Spencer W. Lowden, Bishop; J. E. Griffiths, Whittier; Bruce M. Dack, Los Angeles; C. K. Wells, Long Beach; Richard N. Thomas, Arcadia; S. A. Soderstrand, Oakland.

The following applicants for land surveyor's licenses were approved for examination:

Russell W. Cummins, Mina; Norman B. Bailiff, San Francisco; D. D. Hillyard, Santa Ana; Takeo Shikamura, Mountain View.

SAN FRANCISCO ARCHITECTURAL CLUB

The February meeting of the San Francisco Architectural Club was unusually well attended. President Walter Clifford presided. The following committees were appointed for the ensuing year: Class, Albert W. Kahl; Entertainment, Walter Ruppel; House and Refreshments, Walter Kuhn; Finance, Waldon B. Rue; Membership and Reception, Otto G. Hintermann; Library, Leo S. Daly; Exhibitions, Leland Hyde and Harold Wagner; Constitution and By-Laws, Ira Springer. The feature of the February meeting was an interesting lecture by Clifford Nelson of the San Francisco Recreation Commission, illlustrated with technicolor movies.

The club participated in the Cambodian Ball, given by the San Francisco Art Association on January 17. The club group, 180 strong, represented "Tonkin China." Walter Ruppel and his able assistants, who worked hard for several weeks prior to the ball making "props" and scenic effects, are to be complimented on the success of the club's participation.

The new Atelier season opened auspiciously with ten members taking the esquisse for the "Sierra Nevada Ski Club" project. This season, the Atelier is collaborating with the School of Architecture at the University of California in the problems of that school. Juies will be chosen for each problem from members of the Northern California Chapter, A.I.A. Messers. Mario J. Ciampi and Preston Ames are the Atelier patrons.

A new class, under the direction of Irving F. Morrow, architect, has been formed to thoroughly imbue the new Atelier students in the rudiments of Architectural Design, History and Composition.

Officers and directors of the club are as follows: President, Walter C. Clifford; Vice-President, H. Walter Ruppel; Secretary, Richard E. Audsley; Treasurer, A. N. Granish; Directors, A. L. Kahl, Charles Conti, Ira Springer; Trustees, Harry C. Nye, Waldon B. Rue, Otto G. Hintermann.—R. E. A.

VALLEJO ELKS BUILDING

Construction of a new building to replace the one burned some time ago will be commenced this year by the Elks' Hall Association of Vallejo. The new structure will occupy the site of the old structure at Georgia and Sonoma Streets, Vallejo.

IN NEW LOCATION

The Association For Advancement of Home Building has moved from the Architects' Building to the Exhibition Hall of the Los Angeles Chamber of Commerce, where it will maintain an Architects' Exhibit and complete building information center.

TEMPERATURE CONTROL

The Johnson Service Company announces publication of a new pamphlet "Johnson Automatic Temperature and Humidity Control," with an attractive blue and gold modernistic cover. Booklet is A.I.A. file size.

COCKTAIL LOUNGE IN HOTEL PORTAGE, AKRON, OHIO, SHOWING RUBBER MURALS, TIRE CHANDELIERS, RUBBERIZED UPHOLSTERING, ETC.

RUBBER MURAL DEPICTING THE SCIENCE AND RESEARCH OF THE RUBBER INDUSTRY, HOTEL PORTAGE, AKRON, OHIO

UNIQUE COCKTAIL LOUNGE

Murals and Fittings all of Rubber

RUBBER, long recognized as one of the basic commodities contributing to the advancement of civilization, has made its entrance into the field of fine arts, as a result of its use in a group of historic and classic murals which decorate the walls of the rubber room in the Hotel Portage, Akron, Ohio.

The idea of producing murals in various colors of compounded rubber is believed to be original with S. R. Real, proprietor of the Portage.

Mr. Real employed the facilities of the Goodyear Tire & Rubber Co., to produce the rubber which was made in large sheets of the same compound used in high grade rubber flooring. The murals, depicting the rubber industry from plantation through factory operations, are the creation of Ivor Johns, Cleveland artist.

The rubber room and its fittings were designed especially to accommodate and harmonize with the murals by Kenneth C. Welch, architect, of Grand Rapids, Michigan.

ENTRANCE TO "RUBBER ROOM" HOTEL PORTAGE, AKRON, OHIO

MURALS DEPICTING MANUFACTURE OF RUBBER, TABLE TOPS, CHAIR COVERS AND FLOORS ARE RUBBER

Originals of the murals were produced by Mr. Johns on a greatly reduced scale, in the colors desired for the finished work. Each mural then was projected to exact size in charcoal outline on heavy wrapping paper and the colors to be used indicated by number-code. Each expanse of color then was cut out to serve as a template or pattern.

Pieces of the rubber flooring material in the desired colors, then were cut out carefully to the exact shape represented in the original paintings by aid of the templates and mounted in their proper places on fibreboard with the aid of rubber cement. The finished murals then were erected into place on the walls.

In all, there are seven murals, four of which are approximately life-size and three about one-quarter life-size.

A research laboratory scene; two factory scenes and a cotton plantation scene are on the side walls. Above the three sides of the bar or counter, are as many rubber plantation scenes.

While the idea of interpreting murals in rubber is the outstanding feature of the rubber room, rubber is also used for floor covering, bar-counter and facing, table tops, wainscoting, etc.

RICHARDSON v. RICHARDSONIAN
(From Time)

Henry Hobson Richardson died of Bright's disease on April 27, 1886, two years after the first steel frame building had been erected in Chicago. Unlike his admirer, the late Louis Sullivan, Richardson had nothing to do with the development of the skyscraper, but because he was the most important U. S. architect of the 19th Century, Manhattan's Museum of Modern Art last week hung a gigantic portrait of him in its lobby, published a scholarly critique of his work and displayed photographs and plans of his most important buildings all over the ground floor.

Few U. S. schoolboys have ever heard of H. H. Richardson. If they have eyes to see, though, they cannot help being aware of the type of architecture he popularized; if they are schoolboys of taste they view it with alarm. No man was ever more betrayed by his imitators. What the trade knew as "Richardsonian Romanesque" are the banks, schools, churches, libraries, jails which still dot the land, built of the knobbiest of rough-cut masonry, with livid tile roofs, arched windows and a profusion of useless squat towers. What his admirers have never ceased to point out is that Richardson himself was very seldom Richardsonian. His best buildings: the Marshall Field Wholesale Store in Chicago, Harvard's Sever Hall, the Albany City Hall, Boston's Brattle Square Church ("The Church of the Holy Bean Blowers"). These were heavy-set, impressive buildings befitting a stolid age, but all were well-planned, magnificently proportioned and still serve as an inspiration to young architects.

H. H. Richardson really knew very little about Romanesque architecture. His ornament was original, more often Syrian than Romanesque. In all his churches the object most admired by the public-at-large, the tower of Boston's Trinity Church, was not designed by Richardson at all. It was an adaptation by the slickest of exterior decorators, the late Stanford White, then a draughtsman in the Richardson office, of the lantern of Salamanca Cathedral, added when Trinity's builders announced that they were unable to execute Richardson's more original first design.

Born in St. John's Parish, La., in 1838, Henry Hobson Richardson went to Harvard when his stuttering kept him from a West Point appointment. He was the second famed U. S. architect to study his profession in Paris. Once back in his native country his success as an architect was rapid. Rebelling against the General Grant era of architecture, he won competitions right and left while his prize-winning designs brought in other commissions. One of his least successful, most "Richardsonian" buildings, the New York State Capitol, was the cause of a great scandal. He was called in as architect after graft and mismanagement had used $7,000,000 of public funds and only carried the original design of Architects Arthur D. Gilman and Thomas Fuller through the first floor. The graft continued. The handsome metal ceiling that Richardson designed for the Senate Chamber was secretly executed in papier-mache by a political contractor.

Romantically slim and handsome in his youth, Henry Hobson Richardson grew into a great bearded barrel of a man, proud of his wife and six children, his combined home and office, his vast capacity for champagne and the bright yellow vests he wore with evening clothes. Though he built several churches he was by no means a religious man. In fact at dinner one evening his good friend Phillips Brooks, rector of Boston's Trinity, was abashed to learn that Architect Richardson had never read the Bible. Architect Richardson promised to do so, started at Genesis, read straight through the night. At breakfast next morning he lustily hailed his family:

"I have been reading the Bible, and it's the damnedest most interesting book I ever read in my life."

ENTERS CONTRACTING BUSINESS

W. C. Tate, Jr., who has been identified with the McNear Brick Company for some time and who years ago built the first steel frame house in the Bay District, has re-entered the general contracting business with offices at 883 Market St., San Francisco. Mr. Tate will figure all types of building construction.

PERSONAL

A. F. Rosenheim announces the removal of his offices to suite 518 Chamber of Commerce Building, Los Angeles.

Estimator's Guide

Giving Cost of Building Materials, Wage Scale, Etc.

Amounts given are figuring prices and are made up from average quotations furnished by material houses to San Francisco contractors.

NOTE—3% Sales Tax on all materials but not labor.

All prices and wages quoted are for San Francisco and the Bay District. There may be slight fluctuation of prices in the interior and southern part of the state. Freight cartage, at least, must be added in figuring country work.

Bond—1½% amount of contract.

Brickwork—

Common, $35 to $40 per 1000 laid, (according to class of work).

Face, $75 to $90 per 1000 laid, (according to class of work).

Brick Steps, using pressed brick, $1.10 lin. ft.

Brick Walls, using pressed brick on edge, 60c sq. ft. (Foundations extra.)

Brick Veneer on frame buildings, $ .75 sq. ft.

Common f.o.b. cars, $12.00 job cartage.

Face, f.o.b. cars, $45.00 to $50.00 per 1000, carload lots.

HOLLOW TILE FIREPROOFING (f.o.b. job)

3x12x12 in.	$ 84.00 per M
4x12x12 in.	94.50 per M
6x12x12 in.	126.00 per M
8x12x12 in.	225.00 per M

HOLLOW BUILDING TILE (f.o.b. job) carload lots.

8x12x5½	$ 94.50
6x12x5½	73.50

Discount 5%.

Composition Floors—18c to 35c per sq. ft. In large quantities, 16c per sq. ft. laid.

Mosaic Floors—80c per sq. ft.

Duraflex Floor—23c to 30c sq. ft.

Rubber Tile—50c per sq. ft.

Terazzo Floors—45c to 60c per sq. ft.

Terazzo Steps—$1.60 lin. ft.

Concrete Work (material at San Francisco bunkers)—Quotations below 2000 lbs. to the ton. $2.00 delivered.

No. 3 rock, at bunkers	$1.80 per ton
No. 4 rock, at bunkers	1.75 per ton
Elliott top gravel, at bunkers	2.10 per ton
Washed gravel, at bunkers	2.10 per ton
Elliott top gravel, at bunkers	2.10 per ton
City gravel, at bunkers	1.75 per ton
River sand, at bunkers	1.80 per ton
Delivered bank sand	1.20 cu. yd.

Note—Above prices are subject to discount of 10c per ton on invoices paid on or before the 15th of month, following delivery.

SAND

Del Monte, $1.75 to $3.00 per ton.

Fan Shell Beach (car lots, f.o.b. Lake Majella), $2.75 to $4.00 per ton.

Cement, 2.50 per bbl. in paper sks.

Cement (f.o.b. Job, S. F.) $3.00 per bbl.

Cement (f.o.b. Job, Oak.) $3.00 per bbl.

Rebate of 10 cents bbl. cash in 15 days.

Calaveras White .....$6.00 per bbl.

Medusa White .....$8.00 per bbl.

Forms, Labors average $30.00 per M.

Average cost of concrete in place, exclusive of forms, 35c per cu. ft.

4-inch concrete basement floor .....12½c to 14c per sq. ft.

4½ inch Concrete Basement floor.....14½c to 16c per sq. ft.

2-inch rat-proofing .....7½c per sq. ft.

Concrete Steps .....$1.40 per lin. ft

Dampproofing and Waterproofing—

Two-coat work, 15c per yard.

Membrane waterproofing—4 layers of saturated felt, $4.00 per square.

Hot coating work, $1.80 per square.

Medusa Waterproofing, 15c per lb., San Francisco Warehouse.

Electric Wiring—$12.00 to $15.00 per outlet for conduit work (including switches). Knob and tube average $7.00 per outlet, including switches.

Elevators—

Prices vary according to capacity, speed and type. Consult elevator companies. Average cost of installing an automatic elevator in four-story building, $2800; direct automatic, about $2700.

Excavation—

Sand, 50 cents; clay or shale, 80c per yard.

Teams, $10.00 per day.

Trucks, $18 to $25 per day.

Above figures are an average without water. Steam shovel work in large quantities, less; hard material, such as rock, will run considerably more.

Fire Escapes—

Ten-foot balcony, with stairs, $75.00 per balcony, average.

Glass (consult with manufacturers)—

Double strength window glass, 15c per square foot.

Quartz Lite, 50c per square foot. Plate 75c per square foot.

Art, $1.00 up per square foot.

Wire (for skylights), 35c per sq. foot

Obscure glass, 26c square foot.

Note—Add extra for setting

Heating—

Average, $1.90 per sq. ft. of radiation, according to conditions.

Iron — Cost of ornamental iron, cast iron, etc., depends on designs.

Lumber (prices delivered to bldg. site).

No. 1 common	$33.00 per M
No. 2 common	28.00 per M
Selection O. P. common	38.00 per M
2x4 No. 3 form lumber	24.00 per M
1x4 No. 2 flooring VG	60.00 per M
1x4 No. 3 flooring VG	50.00 per M
1x6 No. 2 flooring VG	60.00 per M
1¼x4 and 6, No. 2 flooring	65.00 per M

Slash grain—

1x4 No. 2 flooring	$45.00 per M
1x4 No. 3 flooring	38.00 per M
No. 1 common run T. & G.	31.00 per M
Lath	7.00 per M

Shingles (add cartage to price quoted)—

Redwood, No. 1	$1.10 per bdle.
Redwood, No. 2	.90 per bdle.
Red Cedar	1.00 per bdle.

Hardwood Flooring (delivered to building)—

13-16x3¼" T & G Maple.....$120.00 M ft.

1 1-16x2¼" T & G Maple .....132.00 M ft.

⅞x3½ sq. edge Maple .....140.00 M ft.

	13-16x2¼" T&G	⅜x2" T&G	S-16x2" Sq.Ed.
Clr. Qtd. Oak	$200.00 M	$150.00 M	$180 M
Sel. Qtd. Oak	140.00 M	120.00 M	135 M
Clr. Pla. Oak	135.00 M	107.00 M	120 M
Sel. Pla. Oak	120.00 M	88.00 M	107 M
Clear Maple	140.00 M	100.00 M	
Laying & Finishing	13c ft.	11 ft.	10 ft.

Wage—Floor layers, $7.50 per day.

Building Paper—

1 ply per 1000 ft. roll	$3.50
2 ply per 1000 ft. roll	5.00
3 ply per 1000 ft. roll	6.25
Brownskin, 500 ft. roll	5.00
Brownskin Pro-tect-o-mat, 1000 ft. roll	10.00
Sisalkraft, 500 ft. roll	5.00
Sash cord com. No. 7	$1.20 per 100 ft.
Sash cord com. No. 8	1.50 per 100 ft.
Sash cord spot No. 7	1.90 per 100 ft.
Sash cord spot No. 8	2.25 per 100 ft.

Sash weights cast iron, $50.00 ton.

Nails, $3.50 base.

Sash weights, $45 per ton.

Millwork—

O. P. $100.00 per 1000. R. W., $106.00 per 1000 (delivered).

Double hung box window frames, average, with trim, $6.50 and up, each.

Doors, including trim (single panel, 1¾ in. Oregon pine) $8.00 and up, each.

Doors, including trim (five panel, 1¾ in. Oregon pine) $6.50 each.

Screen doors, $4.00 each.

Patent screen windows, 25c a sq. ft.

Cases for kitchen pantries seven ft. high, per lineal ft., $6.50 each.

Dining room cases, $7.00 per lineal foot.

Labor—Rough carpentry, warehouse heavy framing (average), $12.00 per M.

For smaller work average, $27.50 to $35.00 per 1000.

Marble—(See Dealers)

Painting—

Two-coat work	29c per yard
Three-coat work	40c per yard
Cold Water Painting	10c per yard
Whitewashing	4c per yard

Turpentine, 80c per gal., in cans and 75c per gal. in drums.
Raw Linseed Oil—80c gal. in bbls.
Boiled Linseed Oil—85c gal. in bbls.
Medusa Portland Cement Paint, 20c per lb.

Carter or Dutch Boy White Lead in Oil (in steel kegs).

	Per Lb.
1 ton lots, 100 lbs. net weight	10¾c
500 lbs. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Dutch Boy Dry Red Lead and Litharge (in steel kegs).

1 ton lots, 100 lb. kegs, net wt.	10¾c
500 lb. and less than 1 ton lots	11c
Less than 500 lb. lots	11½c

Red Lead in Oil (in steel kegs)

1 ton lots, 100 lb. kegs, net. wt.	12½c
500 lb. and less than 1 ton lots	12½c
Less than 500 lb. lots	13c

Note—Accessibility and conditions cause wide variance of costs.

Patent Chimneys—

6-inch	$1.00 lineal foot
8-inch	1.50 lineal foot
10-inch	1.75 lineal foot
12-inch	2.00 lineal foot

Plastering—Interior—

	Yard
1 coat, brown mortar only, wood lath	$0.60
2 coats, lime mortar hard finish, wood lath	.70
2 coats, hard wall plaster, wood lath	.80
3 coats, metal lath and plaster	1.25
Keene cement on metal lath	1.30
Ceilings with ¾ hot roll channels metal lath	.75
Ceilings with ¾ hot roll channels metal lath plastered	1.50
Shingle partition ¾ channel lath 1 side	.85
Single partition ¾ channel lath 2 sides 2 inches thick	2.75
4-inch double partition ¾ channel lath 2 sides	1.30
4-inch double partition ¾ channel lath 2 sides plastered	3.00

Plastering—Exterior—

	Yard
2 coats cement finish, brick or concrete wall	$1.10
2 coats Atlas cement, brick or concrete wall	1.35
3 coats cement finish, No. 18 gauge wire mesh	1.50
3 coats Medusa finish, No. 18 gauge wire mesh	2.00

Wood lath, $6.00 per 1000.
2.5-lb. metal lath (dipped) .17
2.5-lb. metal lath (galvanized) .20
3.4-lb. metal lath (dipped) .22
3.4-lb. metal lath (galvanized) .28
¾-inch hot roll channels, $72 per ton.
Finish plaster, $18.90 ton; in paper sacks.
Dealer's commission, $1.00 off above quotations.
$13.85 (rebate 10c sack).
Lime, f.o.b. warehouse, $2.25 bbl.; cars, $2.15
Lime, bulk (ton 2000 lbs.), $16.00 ton.
Wall Board 5 ply, $50.00 per M.
Hydrate Lime, $19.50 ton.

Plasterers Wage Scale	$1.25 per hour
Lathers Wage Scale	1.25 per hour
Hod Carriers Wage Scale	1.10 per hour

Composition Stucco—$1.60 to $2.00 sq. yard (applied).

Plumbing—

From $65.00 per fixture up, according to grade, quantity and runs.

Roofing—

"Standard" tar and gravel, $6.00 per sq. for 30 sqs. or over.
Less than 30 sqs. $6.50 per sq.
Tile, $20.00 to $35.00 per square.
Redwood Shingles, $11.00 per square in place.
Cedar Shingles, $10 sq. in place.
Recoat, with Gravel, $3.00 per sq.
Slate, from $25.00 to $60.00 per sq. laid according to color and thickness.

Sheet Metal—

Windows—Metal, $2.00 a sq. foot.
Fire doors (average), including hardware, $2.00 per sq. ft.

Skylights—

Copper, 90c sq. ft. (not glazed).
Galvanized iron, 25c sq. ft. (not glazed).

Steel—Structural

$100 ton (erected), this quotation is an average for comparatively small quantities. Light truss work higher. Plain beams and column work in large quantities $80 to $90 per ton cost of steel, average building, $89.00.

Steel Reinforcing—

$85.00 per ton, set, (average).

Stone—

Granite, average, $6.50 cu. foot in place.
Sandstone, average Blue, $4.00, Boise. $3.00 sq. ft. in place.
Indiana Limestone, $2.80 per sq. ft. in place.

Store Fronts—

Copper sash bars for store fronts, corner, center and around sides, will average 75c per lineal foot.

Note—Consult with agents.

Tile—Floor, Wainscot, Etc.—(See Dealers).

SAN FRANCISCO BUILDING TRADES WAGE SCALE

Established by The Impartial Wage Board November 9, 1932. Effective on all work January 1, 1933, to remain in effect until June 30, 1933, and for so long thereafter as economic conditions remain substantially unchanged.

This scale is based on an eight-hour day and is to be considered as a minimum and employees of superior skill and craft knowledge may be paid in excess of the amounts set forth herein.

CRAFT	Journeyman Mechanics
Asbestos Workers	$6.40
Bricklayers	9.00
Bricklayers' Hodcarriers	5.60
Cabinet Workers (Outside)	7.20*
Caisson Workers (Open) Water Work	8.00
Carpenters	9.00
Cement Finishers	7.20
Cork Insulation Workers	7.20
Electrical Workers	8.00
Electrical Fixture Hangers	7.00
Elevator Constructors	8.48
Elevator Constructors' Helpers	6.08
Engineers, Portable and Hoisting	8.00
Glass Workers (All Classifications)	6.80
Hardwood Floormen	7.20*
Housemovers	6.40
Housesmiths, Architectural Iron (Outside)	7.20
Housesmiths, Reinforced Concrete, or Rodmen	7.20
Iron Workers (Bridge and Structural)	$9.60
Iron Workers (Hoisting Engineers)	10.00
Laborers (6-day week)	5.00
Lathers, Channel Iron	8.00
Lathers, All Other	6.80
Marble Setters	8.00
Marble Setters' Helpers	5.00
Millwrights	7.20*
Mosaic and Terrazzo Workers (Outside)	7.20
Mosaic and Terrazzo Helpers	5.00
Painters	7.00
Painters, Varnishers and Polishers (Outside)	7.00
Pile Drivers and Wharf Builders	8.00
Pile Drivers Engineers	9.00
Plasters and Hodcarriers (See wage scale under Plastering).	
Plumbers	8.00
Roofers (All classifications)	6.40
Sheet Metal Workers	7.20
Sprinkler Fitters	9.00
Steam Fitters	8.00
Stair Builders	$7.20*
Stone Cutters, Soft and Granite	6.80
Stone Setters, Soft and Granite	8.00
Stone Derrickmen	7.20
Tile Setters	8.00
Tile Setters' Helpers	5.00
Tile, Cork and Rubber	7.20
Welders, Structural Steel Frame on Buildings	9.60
Welders, All Others on Buildings	8.00
Auto Truck Drivers—Less than 2,500 lbs.	5.50
Auto Truck Drivers—2,500 lbs. to 4,500 lbs.	6.00
Auto Truck Drivers—4,500 lbs. to 6,500 lbs.	6.50
Auto Truck Drivers—6,500 lbs. and over	7.00
General Teamsters, 1 Horse	5.50
General Teamsters, 2 Horses	6.00
General Teamsters, 4 Horses	6.50
Plow Teamsters, 4 Horses	6.50
Scraper Teamsters, 2 Horses	6.00
Scraper Teamsters, 4 Horses	6.00

*Established by Special Board

GENERAL WORKING CONDITIONS

1. Eight hours shall constitute a day's work for all crafts, except as otherwise noted.
2. Where less than eight hours are worked pro rata rates for such shorter period shall be paid.
3. Plasterers' Hodcarriers, Bricklayers' Hodcarriers, Roofers' Laborers and Engineers, Portable and Hoisting, shall start 15 minutes before other workmen, both at morning and at noon.
4. Five days, consisting of not more than eight hours a day, on Monday to Friday inclusive, shall constitute a week's work.
5. The wages set forth herein shall be considered as net wages.
6. Except as noted the above rates of pay apply only to work performed at the job site.
7. Transportation costs in excess of twenty-five cents each way shall be paid by the contractor.
8. Traveling time in excess of one and one-half hours each way shall be paid for at straight time rates.
9. Overtime shall be paid as follows: For the first four hours after the first eight hours, time and one-half. All time thereafter shall be paid double time. Saturday (except Laborers), Sundays and Holidays from 12 midnight of the preceding day, shall be paid double time. Irrespective of starting time, overtime for Cement Finishers shall not commence until after eight hours of work.
10. On Saturday Laborers shall be paid straight time for an eight-hour day.
11. Where two shifts are worked in any twenty-four hours, shift time shall be straight time. Where three shifts are worked, eight hours' pay shall be paid for seven hours on the second and third shifts.
12. All work, except as noted in paragraph 13, shall be performed between the hours of 8 A. M. and 5 P. M.
13. In emergencies, or where premises cannot be vacated until the close of business, men reporting for work shall work at straight time. Any work performed on such jobs after midnight shall be paid time and one-half up to four hours of overtime and double time thereafter (provided, that if a new crew is employed on Saturdays, Sundays or Holidays which has not worked during the five preceding working days, such crew shall be paid time and one-half. No job can be considered as an emergency job until it has been registered with the Industrial Association and a determination has been made that the job falls within the terms of this section).
14. Recognized holidays to be: New Year's Day, Decoration Day, Fourth of July, Labor Day, Admission Day, Thanksgiving Day, Christmas Day.
15. Men ordered to report for work, for whom no employment is provided shall be entitled to two hours' pay.
16. This award shall be effective in the City and County of San Francisco.

NOTE: Provision of paragraph 13 appearing in brackets ( ) does not apply to Carpenters, Cabinet Workers (Outside), Hardwood Floormen, Millwrights, or Stair Builders.

STATE ASSOCIATION MEETING AT LONG BEACH

The Directors and District Advisors of the State Association of California Architects met at the Laffett Hotel, Long Beach, Friday evening, January 24. E. W. Mayberry, president of the Long Beach Architectural Club presided. Robert H. Orr's report of the meeting is given herewith in part:

The discussion for the evening revolved about the theme that is most near to each one's heart. The formula for a beam may be worked out with precision but the formula for the practice of architecture is as varied as there are individuals. To think that an association can solve the difficulties of each District and each individual seems quite absurd and yet to listen to conversation one would think that that is its purpose? To answer: Is it of any use to the public? Does it maintain ethics of practice? Does it create special privileges for a few? Why does it not solve local problems? Can it produce direct and tangible benefits to the individual or is it a mere organization for good fellowship?

Perhaps it will be well to begin by reciting from the Constitution and By-Laws: "This Association is established to advance the science and art of architecture; to insure to the public efficient architectural service; to encourage architectural education; to maintain the honor and dignity of the profession of architecture;

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to enlighten the public in relation to the province of architecture in the body politic; to advocate proper legislation and to oppose improper legislation affecting architectural practice; to support the State Board of Architectural Examiners; to co-operate with other professional associations and to cultivate social intercourse among its members."

If all of these things were done how happy we would be. The public has a vital interest in architecture and the science of architecture is dependent upon the public at all times. The science of architecture is not individualistic. It is a rare individaul who can shape the destiny of any science. Without the Guilds perhaps the great architectural monuments of the Old World would never have been builded. Without organization, of some kind, the public would be at the mercy of individualists of every degree and temperament, without recourse from any of the attending ills. Ethics of practice is to place restraint and inflict punishment. For a child this is often daily practice because it does not know better, it has to be brought up and taught that there is a right and a wrong which sooner or later becomes a part of its being.

So it is with the beginner in architecture. It might be unethical for the beginner to cut the price a bit for the first job. Considering he does, what can be the value of service of one's first building compared with the practitioner of long standing? Step by step he learns that his services are worth more and he begins to take on the standards that organized society establishes. Because the State Association includes all architects, from the beginner to the finished product, if there be such a being; and further, by reason of the progressive steps in architecture whereby after years of practice, when one should know better than to be unethical, he can affiliate himself with the American Institute of Architects, which provides these requirements, the State Association deliberately and advisedly excludes ethics as within its province, except to frown upon unethical practice and advise that it is not a part of honor.

Special privileges for the few seem to imply that some are placed in position without due course of reason. To achieve and acquire is a privilege open to all. Why do not young men find a seat upon the State Board of Architectural Examiners and what would be the thought if a Provisional Licensed one should? Perhaps the implication would be unqualified. From this view point let us proceed to find how old a person should be to be eligible to hold office in The State Association. From the By-Laws: "Executive Board:" "Two members of the State Board of Architectural Examiners chosen or appointed by the members thereof . . . shall ipso facto become members of the Executive Board." And, "Two members of the Chapter of The American Institute chosen by the members or appointed . . . shall ipso facto become members of the Executive Board." There is no choice here to include men who do not have professional standing growing

out of years of practice. Aside from the Director of The American Institute of Architects for the Sierra Nevada Division, for the other four members there are no limitations. These four are selected from and by the District Advisors, regardless of years of service. This system should be democratic enough to bring in young men and have them advance step by step to the various offices. If it does not work out that way then something must be wrong and that may be attributed to a lack of interest, which is altogether too prevalent.

Within the past few years, not a few architects have established themselves in interurban communities where heretofore no architect existed or could exist. From this may be drawn the inference that more and more small work is being committed into the hands of architects. "The little fellow," as he is pleased to call himself, feels that the territory is his by right of domain and resents the intrusion of the city gentry coming in and taking the plums. He feels, at least some do, that it is the Association's duty to protect him. How this may be done is beyond comprehension. To undertake such a task would be to set up a dictatorship and a dictatorship can only lead to discord, dissension and ill feeling of such a magnitude as to cause its undoing. Instead, if it were possible, would it not stifle "the science and art of architecture," "efficient architectural service," "architectural education," "honor and dignity of the profession," all of which the Association is duty bound to uphold and promulgate.

To provide direct and tangible benefits cannot be measured as a matter of days, months or even years. Those who have practiced their profession for years and years can reflect back and say quite positively that in their lifetime the profession has made considerable progress, and ranks upon a higher plane today than ever before. Back of this achievement stands something above, beyond and over individual effort, and that something is nothing more than the benefits accruing from many years of organized work.

Good-fellowship is an adjunct worthy of our highest esteem. It is that affection that can be found in no other way than by social contact with one's fellow man. To stand aloof, shun one's competitor, if that is what he should be called, finding no pleasure or profit in sharing the views of others of like kind, is not good-fellowship; it is not even good understanding of one's responsibility in the task he has set his hand and heart to do.

Mr. Natt Piper, chief building inspector, of the City of Long Beach, paid a deserving compliment to the Long Beach Architects.

PASO TIEMPO CLUBHOUSE

Plans are being prepared by Clarence A. Tantau, 210 Post Street, San Francisco, for a new clubhouse at Paso Tiempo, Santa Cruz, for Miss Marion Hollins. The design will be Spanish.

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OAKLAND OIL BURNER MANUFACTURER REVIEWS RECENT HEATING EXPOSITION

FEATURED by an unusual amount of interest on the part of 44,695 visitors who came to see products displayed by over 300 exhibitors, the Fourth International Heating and Ventilating Exposition — "The Air Conditioning Show"—held in the International Amphitheater, Chicago, January 27-31, was voted "the best ever" by the industry and the public alike. Despite the elaborate displays, some exhibitors were inclined to regret that they had not contracted for even more space, and had not featured their equipment even more strikingly. In most of the exhibits display technique reached a high point with the dynamic treatment predominant. The audience could see how things worked by watching them in operation.

The Exposition was held during the same week as was the annual meeting of the American Society of Heating and Ventilating Engineers—where attendance records were broken with a registration of over 1200 engineers and technical men from all parts of the United States and from abroad—and the mid-winter meeting of the National Warm Air Heating and Air Conditioning Association, also a mecca for enthusiastic attendance.

J. C. Johnson, President of the S. T. Johnson Oil Burner Company of Oakland, was among the Californians to attend the exposition and he says he was particularly impressed with the business-like desire to learn on the part of those who visited the show. Displays were designed to answer this demand for knowledge. Many new products were shown for the first time, and many models of equipment and complete installations were in operation. The displays included almost every type of device used in heating, cooling and ventilating, including the residential, the industrial and the commercial air conditioning fields. Featured also were steam and hot water boilers, furnaces, boiler-burner and furnace-burner units, central and unit air conditioners, controls, valves, pumps, traps, oil burners, stokers, gas burners, heating surfaces, radiation accessories, unit heaters and coolers, water heaters, insulation, piping, sheet metal, refrigerating machines and accessories, fans and blowers, air filters, instruments, tools, welding apparatus, motors, drives, registers and grilles, to name but a few. Little was neglected, either in the range of the exhibits or in attention given them by those who attended.

Conditioning the air in winter by heating it is an age old custom which has created industries, fashioned domestic habits and engendered a long line of specific apparatus burning wood, coal, gas, oil and electricity. Yet all this served merely to provide higher temperatures in enclosed spaces during the cold portions of

the year. The more recent efforts to do something the same in summer, but in the reverse direction, has led to a broad new development known as "air conditioning." The Fourth International Heating and Ventilating Exposition marked another stage in the transition between old time equipment for specific purpose and new type systems which serve all of the weather requirements throughout the year. Whereas formerly some exhibitors showed furnaces, boilers, ventilating fans, or air conditioning equipment, the trend now is to consolidation. This year's Exposition proved that whether originally the manufacturer had been making oil burners, coal furnaces, or ventilating fans, he was now offering whatever equipment was necessary properly to condition a given space, winter or summer, with respect to temperature, humidity, and air circulation.

In the oil burner field, Mr. Johnson said, the tendency was completely to enclose the operating unit within a steel jacket which would make it more attractive in appearance without increasing the maximum dimensions. Sometimes the oil burners were furnished with domestic hot water coils to provide hot water service without the use of a storage tank. Thus heating, source of heating, and hot water supply were all made available within a single unit.

Quick heating with respect to water supply was offered as an auxiliary feature to several types of boiler and furnace equipment. For heating large buildings there were new steam heating systems which provided for direct-by-the weather control. It is claimed that these keep the building supplied with just sufficient steam to maintain comfortable temperatures without waste.

Accessory equipment in the oil burner field included strainers, pumps, motors and the necessary conduits and insulation. One of the innumerable special devices was a fan unit which could be slipped into a gas range oven to provide, with the door open, early morning kitchen comfort through warm air circulation. Radiators continued to disappear in the wall, and a wide assortment of cabinets were used to assist them. The use of pulverized coal for domestic heating was promoted by equipment especially designed for handling this fuel. One design for mechanical heating units offered a patented arrangement whereby the air to be heated is returned at the top of the furnace casing and is preheated before entering the filter and blower compartment. The arrangement is said to increase the overall heating efficiency of the compartment. There were many devices for putting the hot water heating unit inside the central heating system.

Heating systems included the circulation and control of subatmospheric steam. This development was said to represent a valuable scientific achievement in steam heating. Not only the amount but the temperature of steam is varied, depending on the weather for differential operation. There are no limitations on the source of steam. Steam may be supplied by high pres-

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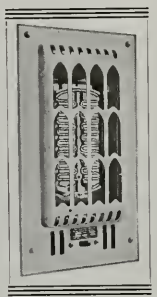
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A combined vapor turbine and electric vacuum heating pump handled the condensation and air from heating systems continuously as long as steam was on the boiler, using no electric current until steam was below one pound. Then the electric motor cut in until adequate steam was again available.

Some of the exhibits featured model houses by means of which the Exposition visitors could themselves operate little valves and see where the heat went round and up, and where it came out. In one instance neon tubing was used to denote the pipe lines. In one model the visitors could operate a system of temperature regulation to observe the manner by which ordinarily the control operates in response to outside weather conditions. Oil burners, and fuel oil pumping and preheating equipment were well represented by operating displays.

JURY FOR BRIDGE COMPETITION

The following jury of nationally known architects and engineers has consented to serve as judges in the eighth student bridge design competition held annually by the American Institute of Steel Construction:

H. H. Allen, Vice President, J. E. Greiner Company, consulting engineers of Baltimore.

Arthur G. Hayden, designing engineer, Westchester County Park Commission, White Plains, N. Y.

Theodore E. Blake, architect, New York.

Archibald Manning Brown, President Architectural League of New York.

H. H. Saylor, Editor of Architecture.

Students of engineering and of architecture in the colleges and technical schools of the United States are eligible to participate in this competition. The problem is a design for a grade elimination over-pass. The students are now invited to submit their preliminary designs which the jury will review on April 15, and select therefrom the ten best. The students who designed those will be requested to make finished drawings which the jury will judge on May 13. The best of the final drawings will receive a cash prize of $100. The second best will be awarded $50 in cash. The prize winners and those receiving honorable mention will receive certificates of award signed by the jury.

STATE REGISTRAR OF CONTRACTORS

Earl S. Anderson of Los Angeles has been named State Registrar of Contractors by the California State Contractors' License Board, which is a division of the Department of Professional and Vocational Standards. Mr. Anderson succeeds W. G. Bonelli, who has been acting as Registrar for the Board in addition to his regular office as Director of the State Department, and member of the Governor's cabinet.

OREGON CHAPTER A.I.A.

Present at the February 18 meeting at the Ainsworth Coffee Shop, Portland, were Messrs. Aandahl, Morin, Marsh, Johnston, Herzog, Jacobberger, Clausen, Stanton Parker, Foulkes, Wardner, A. Lawrence, Brookman, Sundeleaf, Bear, Wicks, Dukehart, Turner, Belluschi, Crowell, Doty and Schneider.

President Aandahl precided.

Mr. Morin was instructed by the President to write a letter of appreciation to the Gas Company for loan of broadcasting equipment.

Mr. Morin referred briefly to the data being gathered by relief workers for preparing "The American Guide," a WPA project. This collection of volumes is the first comprehensive attempt to publish an American Baedecker. One of the important sections of this Guide is concerned with architecture and every important building in each locality is to be listed, with the name of the architect, date, styles, use, size, cost and other interesting facts.

The data for Multnomah County is being collected by a Miss LaFrance, and Mr. Morin urged that each Chapter member give her every assistance possible when she calls, or to list his own buildings with complete information and mail same to Mr. Roi L. Morin, 1601 Public Service Bldg.

Through previous arrangement with the WPA, all architectural data for this locality is to be revised and edited by the Public Information Committee of the Oregon Chapter.

Draft of circular letter to all political subdivisions of Oregon was read and discussed.

Mr. Stanton reported on letter received from National Committee on Education, urging greater activity along lines of education by the "Mentor" system. It was moved and seconded that Mr. Stanton's recommendations be accepted and that Mr. Stanton so inform Mr. Zantzinger.

A report was submitted by A. Lawrence on travels and sketches of H. E. Hudson, third holder of the Ion Lewis Traveling Scholarship. Some of Mr. Hudson's sketches were exhibited at the meeting.

A report was made by Mr. Clausen on the "Buffalo Plan" of The Small House Bureau. Motion amended that report be accepted and that Mr. Shreve be informed that the Chapter consider the plan against the best practices of Architecture and should be rejected.

Mr. Herzog moved that the report be accepted; seconded by Mr. Parker. Motion as amended carried.

Mr. Brookman was instructed to report on holding an exhibition for spring.

Mr. Herzog moved that Exhibition Committee arrange to hold the exhibit early in April. Motion seconded and carried.—J. T. S.

ADDITION TO CHURCH

Charles F. Maury, Monadnock Building, San Francisco, is preparing plans for alterations and additions to the First Presbyterian Church at Richmond.

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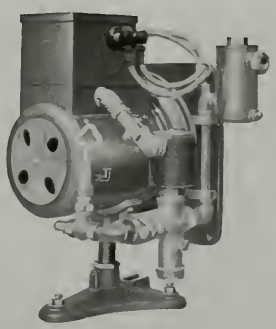

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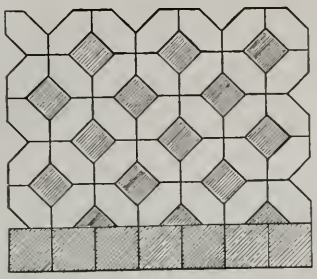

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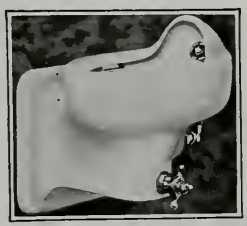

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S. F. FAIR NOT TILL 1939

San Francisco's World's Fair will open Saturday, February 18, 1939, and run for 288 days to Saturday, December 2, 1939.

The decision to stage the Fair in 1939, rather than 1938, was reached immediately after the ceremony at Yerba Buena Shoal celebrating the actual beginning of physical work on the project.

"We regret the necessity of waiting an additional year," said Leland W. Cutler, president of the Exposition. "However, circumstances beyond the control of the Exposition Company, resulting in various delays, dating back more than a year to the protracted controversy over the Fair site, have made it advisable, in our opinion, to choose the year 1939.

"Our directors have consistently asserted that our forthcoming Fair must eclipse all previous expositions. During the past several weeks it has become apparent that in order to open it in 1938, we should be compelled to sacrifice careful planning and promotion of the enterprise.

"Rather than attempt to rush this great project through at the cost of its ultimate beauty and success, we prefer to wait one more year, confident that the people of California will endorse the wisdom of our decision."

With the date definitely fixed, Mr. Cutler declared that the Exposition will begin immediate efforts to bring more than 1,500 national conventions to San Francisco and the Bay area in 1939.

Exposition leaders pointed out that the extension will enable them to secure more representative participation from foreign nations, will give architects an opportunity to devote more time to the design of buildings, and enable the company to "sell more exhibit and concessions space, with a consequent increase of potential revenue."

BETTER HOMES GUIDEBOOK

With the printing of the 1936 Campaign Guidebook for Better Homes in America, Miss Isabel Hodgkins, assistant administrator in charge of the campaign, states that the fifteenth annual drive for community improvement is actively underway. The Guidebook is being mailed to some 5000 Better Homes chairmen throughout the United States from the Better Homes in America headquarters at Purdue University. The booklet forms the basis of organized effort throughout the country to help people improve their homes and their communities. The campaign culminates in Better Homes Week, April 26 to May 2.

The campaign for 1936 stresses the idea of improving and modernizing the entire residential block rather than isolated houses. An effort will be made to interest home owners and renters in entire blocks to improve their dooryards and gardens. In some localities demonstration houses will be used to stimulate new ideas, better homes and to show localities examples of modern trend in small dwellings. As in the past, there will be essay contests, local tours, special Sunday sermons in churches, lectures before women's clubs, schools and business organizations.

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CONTRACTOR'S LICENSE LAW UPHELD

Another victory for the Contractors' License Law in California is reported by State Registrar William G. Bonelli, who states that the Appellate Division of the State Supreme Court has upheld a departmental decision handed down over two years ago, suspending the license of Philip Karz of Los Angeles.

The decision of the Registrar was set aside in the Superior Court of Los Angeles County by Judge Emmet H. Wilson in February of 1934. The reversal was carried to the higher court with Eugene M. Elson, Deputy Attorney General, representing the Department. After more than two years the Appellate Court has reversed the judgment of the Superior Court in a decision which is a complete victory for the State Department.

"I am highly gratified," states Registrar Bonelli. "Our record as to reversals is, in my opinion, rather remarkable, due to the fact that the Contractors' License Bureau probably takes punitive action against more licentiates than any other similar body in the State of California. Our reversals to date can be numbered upon the fingers of one hand, with space left over. I believe this case and our general record prove conclusively that our method of procedure in complaint cases is soundly conceived and carried out by a well qualified personnel. In view of the Karz decision, the Department feels very confident that it may expect splendid support from the higher courts as long as we continue to proceed in our established manner."

CONFERENCE ON LOW COST HOUSING

The lively interest manifested during recent months in cheap and effective housing for urban and rural communities has encouraged the Pennsylvania State College to arrange a conference on low cost housing April 16th and 17th. The preliminary report of the Pennsylvania State Planning Board, issued last year, pointed out that in the last fifteen years relatively few dwellings have been constructed in the Commonwealth within the price range of the majority of the people. The possibility of expansion in this hitherto neglected field is one which is being vigorously explored by architects, engineers, planning boards, realtors, bankers, industrialists, State and Federal Agencies. The time seems ripe for the College to provide in Pennsylvania an opportunity for the consideration of various elements from which a practical program of low cost housing would evolve. Attractive costs are essential, taking into consideration materials, labor and financing.

Papers will be presented by H. S. Buttenheim, editor American City, on the subject of "Taxation as a Factor in Housing for Low Income Groups"; H. H. Engle, Assistant Director Department of Commerce, Washington, on "Interrelation of Industrial Decentralization and Housing"; Arthur C. Holden, Consulting

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Architect and Housing Expert, New York City, "An Analysis of the Housing Problem for Low Income Groups", and Dr. Edith E. Wood, author of "Recent Trends in American Housing," a paper on "Cooperative Housing for Workers."

Other papers will be presented by Ernest M. Fisher, Director Division of Economics and Statistics, Federal Housing Administration, on "The Role of Government in Housing," and by H. N. Peaslee, Chief Economic Analyst in the Housing Division, P. W. A., on "The Economics of Low Cost Housing." Pope Barney, architect of Philadelphia, will be chairman of one of the sessions. The College is arranging a Housing Exhibition to coincide with the Conference.

ARCHITECTS NEED ADVICE

INSECT damage to structures containing wood and its products is coming to be recognized as a building problem of major importance. In designing wood frame buildings, it is just as important that the architect should have expert advice as to the prevention of damage by wood-destroying insects, as it is that the architect should require the services of a structural engineer, an electrical engineer, or a heating and ventilating engineer.

A case in point is that of a fraternity house in the Bay Region. Some five or six years ago this building was reconstructed at a cost of about $40,000, and, while the exterior of the structure presents a very pleasing appearance and is generally considered to be an architectural gem, the understructure has already been seriously damaged by termites, and is in urgent need of repairs.

By the expenditure of a very small sum of money at the time the reconstruction was undertaken, advice could have been had and the present difficulties avoided. There is such expert advice available to architects. This editor would urgently recommend that architects avail themselves of it to avoid future embarrassment.

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Over 1,000,000 pounds of steel per month is being consumed on the Metropolitan Water District Aqueduct from the Colorado River.

At present the principal use of steel on the aqueduct is for reinforcement of concrete canal and siphon sections. Other important uses include steel for supporting tunnel sections and for the construction of towers on the Water District's 237-mile long power transmission line from Boulder Dam.

In the near future, large quantities of plate steel will be used for delivery pipes to the aqueduct pumping stations and for steel pipe sections of the aqueduct distribution system.

Building of the aqueduct has required 20,035 freight carloads of materials during the past three years —or enough cars to form a 170-mile freight train — according to a carloading report made by General Manager F. E. Weymouth.

The report showed that the manufacture of the 3,052,260 tons of materials represented by the carloading figures is giving employment to approximately 30,000 men in Southern California and throughout the nation, in addition to the 8,000 men directly employed on aqueduct construction.

It is estimated that by the time the aqueduct project is completed its construction will have consumed sufficient materials, supplies and equipment to form a solid train of freight cars somewhat longer than the 390-mile aqueduct itself.

TERMITE CONTROL

A total of 42 termite control operators qualified at the first examination for state license held by the Structural Pest Control Board, bringing the total number of licensed operators up to 231. The state law provided that licenses would be issued without examination to all operators who were engaged in business at the time the law went into effect. Glen V. Slater, deputy registrar of contractors, is registrar of termite control operators.

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LOCAL PLANNING IN THE PACIFIC NORTHWEST

LOCAL planning in the Pacific Northwest might be said to be about half constructive and half preventive, and only in small measure corrective. It contrasts with the Atlantic Northeast, for example, a region more than two centuries older, where the corrective proportion has become very high. In this region, a rather virgin field for planning as indicated by the following brief summary, we should profit by the experience of the older regions and avoid the necessity for much of the corrective type of planning effort.

City Planning. Up to two years ago city planning was the major objective. There was at least a foundation for such activity. Oregon had a state enabling act—Washington had home-rule authority.

Although the majority of the present city planning commissions was organized during the closing days of CWA in 1934, a number of cities at that time secured suitable help and began the preparation of a municipal inventory along the lines adopted by the Portland Planning Commission.

It was found that in the smaller cities a suitable base map for planning work was the first requirement. A number of cities began such a map, showing surface conditions, as well as the location, type and condition of underground utilities.

Although only a start toward planning had been made, the value of even that little was reflected in the type and character of work relief projects selected in those cities where planning had been considered.

The interest in city planning during 1934 brought about the enactment of enabling acts in Idaho and Washington during the 1935 legislative meetings, putting city planning on a firm basis in those states also.

White-collar projects under WPA are reviving city planning interest. Some cities are continuing work, with such help, on municipal inventories

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and base maps. Several are undertaking street, park, and recreational plans.

County Planning. A number of county planning boards was organized in 1934 on an interim basis, pending legislative enactment for official boards. In such counties, although little basic planning was undertaken, considerable useful work was done in the study of immediate needs and the selection of suitable works projects for immediate development.

In 1935, legislative enactment enabled counties in Idaho and Washington to legally establish planning boards and allocate funds for their use.

County planning, although a newer endeavor than city planning, is making rapid progress. In the Pacific Northwest, an area of great distances, with some counties larger than eastern states, the county appears to be a logical unit for planning. Some counties have within their area entire drainage basins—others have large special interests such as mining, lumbering, farming or stock raising. The coastal counties have important problems of lumbering, commercial fishing, and recreation. In all counties there are the problems of transportation and use and conservation of water and land. Such problems are being studied on a local basis, on a joint basis by neighboring counties in many cases, by the state planning boards, and finally, on a regional basis, by the Regional Planning Commission.

SAN FRANCISCO ARCHITECTS MEET

The regular meeting of Northern California Chapter, A.I.A., was held at the St. Germain Restaurant, San Francisco, Tuesday evening, February 25. Will G. Corlett presiding.

The following were present:

Harris C. Allen, Clement Ambrose, John Knox Ballantine, Jr., Morris M. Bruce, Will G. Corlett, John J. Donovan, Albert J. Evers, Albert Farr, Edward L. Frick, Wm. I. Garren, Wayne S. Hertzka, Henry T. Howard, Samuel Lightner Hyman, Ray-

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The minutes of the January meeting were approved as published.

The discussion of the evening centered upon small housing.

Harris Allen, Chapter representative on the A.I.A. Committee on Housing, presented bulletins issued on the subject by the Institute. He urged that the Chapter cooperate with the movement to provide better planning and supervision of construction of small houses.

House bureaus in Buffalo and Baltimore were mentioned and it was instructed that the Chapters in these cities be asked for information on their operation.

The Architects Home Service Bureau in San Francisco was referred to as an organization which brings the benefit of full Architectural Services to those who wish to build a small home. P. J. McGuire who heads the bureau was present and spoke briefly on the problems confronted in bringing the public to an understanding of the value of an architect's guidance.

Mr. Evers approached the subject from the viewpoint of the F.H.A., whose granting of Certificates of Quality on executed work coming under its jurisdiction, he stated, is recognition that the quality standard which it requires has been met. Others felt that the Certificates of Quality should be restricted to houses having Class A rating.

Mr. Garren told of studies on housing made by the State Association.

A Federal Building and Loan Company now operates in San Francisco and is directed by a Board comprised, mainly, of architects. This interesting fact was brought out by Mr. Masten who stated that better knowledge of the structural and esthetic values of the property to be financed is afforded because of this architect directorship.

Comments by others included statements that architects by accepting small commissions, have brought about a condition making it difficult to obtain regular fees; that the only answer to the problem is public information; that the architect should look upon small house planning as a community betterment and a public service from which adequate financial return should not be expected. —J.H.M.

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